ALL ABOUT CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

EDITORS

S.R. HIREMATH B.J. KRISHNAN AND VIJAY PARANJPYE

SAMAJ PARIVARTANA SAMUDAYA, DHARWAD
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ECONET, PUNE
JANAPARA VIGNAN - TANTRAGNAN SAMSTHE, DHARWAD et al.

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"In the past the peasants who had sma pieces of land who couldn't eke out enough fr it for their survival used to eat fruits from the nearby forests and used to collect leaves, flowers and dried tree branches and by selling these to others supplemented their income. They also used to maintain a couple of cows or goats and were living happily in their villages depending on the village common grazing land. But H.M's Government's conspiratorial bureaucracy have used their foreign intelligence and have newly established the great forest department and have incorporated all mountains, hills, valleys alongwith barren lands and village common grazing lands in this department, thus making it impossible for the goats of the poor peasants to find even breathing space in the forests .....".

- Mahatma Jyotiba Phule
from his Marathi book *Shetkaryacha Aasu (Cultivator's Whipcord), 1882*

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ALL ABOUT CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

Towards a People-Oriented Biodiversity Policy, Legislation and related issues.

Editors :
S.R.Hiremath, B.J. Krishnan and Vijay Paranjpye

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CONTENTS

ARTICLES

			Page
Preface			ix
Introduction			xi
1.	The Convention on Biological Diversity - an Overview	*S.R.Hiremath B.J.Krishnan*	1
2.	Biodiversity : For a People - Oriented Policy	*S.Gopikrishna Warrier*	8
3.	Conservation of Biological Diversity in India : An Approach	*Ministry of Environment and Forests, GOI*	14
4.	Biodiversity Related Intellectual Property Rights : GATT Final Act - CBD and the challenges	*N.S. Gopalakrishnan*	62
5.	Convention on Biological Diversity : Progress on Major issues at the Second Conference of Parties and Recommenda- tions for follow-up actions	*Ashish Kothari*	75
6.	Intellectual Property Rights in the Context of CBD	*Chhatrapati Singh*	92
7.	Traditional Forestry and Conservation of Bio-diversity in the Western Ghats of South India.	*M.D. Subash Chandran*	95
8.	Convention on Biological Diversity and the Wildlife Protection Act 1992.	*B.J.Krishnan*	111

DOCUMENTS

1.	The Rio Declaration on Environment and Development	133
2.	The Convention on Biological Diversity (CBD)	138
3.	Statement of Principles on Forestry	171
4.	Conservation of Biological Diversity (From Agenda 21)	180
5.	Recognizing and Strengthening the role of Indigeneous people and their community (from Agenda 21)	190
6.	Multilateral Trade Negotiations : The Uruguay Round (Excerpts from Final Act Embodying the Results of the Urguay Round of Multilateral Trade Negotiations 1994)	191
7.	Declaration of TRIPs Patents Regime (Forum of Parliamentarians on Intellectual Property)	204
8.	National Forest Policy Statement -1988	209

CAMPAIGN

"Azadi se Swarajya" Theme Paper on Campaign for Peoples' Rights over Natural Resources - in the 50th year of Independence		213

FROM THE PRESS

1.	Ordinance Likely in Plant Varieties Law	HBL	12.3.96.	241
2.	Protection Pressures	HBL	24.3.96	243
3.	Plea to Notify Tribal, Forest Villages	HBL	2.5.96	245
4.	Campaign for Rights over Natural Resource	HBL	10.7.96	247
5.	Campaign for Rights of Tribal People	H	31.7.96	249
6.	Campaign for Environment Protection	DH	1.8.96	250

Explanation for Abbreviations:

DH Deccan Herald

H : The Hindu

HBL The Hindu Business Line

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PREFACE

Earth is the only living planet; this planet is unique because there is life. The quality of life of the this planet depends upon the natural green cover and the different eco - systems of this planet - this is the Biological Diversity.

This simple but unique truth, realised by mankind earlier, came under proper and sharp focus in the Earth Summit - 1992. The adoption of, Convention on Biological Diversity, is a milestone in history of mankind.

Mankind has to grow and develop by fulfilling the material and spiritual needs; but this development has to take place on a physical entity which is environment; the quality of human life depends on the quality of the environment; and the quality of environment depends on the quality of its Bio-Diversity.

In the Indian context conservation of bio-diversity is not only a scientific truth but also has a spiritual dimension. This is a nation which believed in the safety and integrity of all life. "My religion includes all life" said Gandhiji.

India had attained its political Independence fifty years ago. But the social and economic independence remained a distant dream. In the last fifty years of its independence, India had certainly developed and grown. But that is a lopsided development. The rich had grown richer and the poor had become poorer.

Before the advent of the British empire, every Indian village was an independent republic - the villages were self-reliant and self sufficient; they ruled themselves - a self rule in harmonious tune with nature. The villages managed, controlled and conserved their natural resources. It was a case of small societies managing their natural resources in a sustainable way. But this union of the villages with their natural life supporting basis was disturbed during the colonial rule. the Government took over all the natural

resources under its custody in the name of scientific management.

The state control of the natural resource base of the village societies continued even after the independence; that an independent, sovereign country like India needed a different approach in respect of these natural resource was neither comprehended nor appreciated. The lopsided development programme eroded deeply into those natural resources putting the interest of the people into jeopardy; on the other hand, government grip over the resource basis was becoming more pronounced. The centralised planning and management of these resource basis not only made the life of the marginalised people difficult, but made the political independence meaningless. The time has come, for these marginalised people to take charge of their natural resource base and manage it in a sustainable manner. Any attempt in this direction will be a pointer towards "People's Self Rule".

People's Self Rule can and should mean as the economic and social improvement of the people of their natural resources base.

The objective of the CBD is the conservation of the natural resource bases, its sustainable use and the equitable sharing of the benefits of such conservation and sustainable use. The CBD can and should be used as a vehicle to harmoniously integrate to conservation concerns of biodiversity into the livelihood security of the marginalised. This publication is a people's attempt to information, knowledge and concerns on biodiversity in the light of the foregoing.

15th August 1996
Dharwad

S. R. Hiremath
B.J. Krishnan
Vijay Paranjpye

INTRODUCTION

This book : *"All About Convention on Biological Diversity"* is being published on the occasion of launching the national campaign: *"Azadi se Swarajya"* (From Independence to Self Rule) on August 15, 1996 when the country enters the 50th year of independance.

The Jan Vikas Andolan (JVA), a national network of Peoples' Movements, Organisations and individuals formed in the aftermath of the historical rally at Harsud village on September 28,1989, is spearheading this movement along with similar minded, networks, and organisations. The focus of this yearlong campaign during the 50th year of independance - as part of a long term movement - is the **"People's Rights Over Natural Resources: Putting it on the National Agenda"** leading to self rule by traibals and rural poor over their natural resources, land, water and forests.

A series of events are planned in various parts of the country as part of this "Azaadi se Swarajya" campaign, the details of which are included in a write-up towards the end of this book.

A major impetus for bringing out this book to facilitate a debate on a vital issue like Biodiversity Convention came from the unprecedented response we received to our earlier books **"All About Draft Forest Bill and Forest Lands"** and **"An Amended Draft Forest Bill 1995 - Voluntary Organizations "** published by the Samaj Parivartana Samudaya (SPS) et al; the fact that three editions of both the books had to be published in a year's time and that they were extensively used by the activists, scientists, government officials, policy makers etc, for widespread debate and discussions from grass root to policy levels has encouraged us to begin similar effort on the Convention on Biological Diversity (CBD) and related issues like the Wild Life Protection (WLP) Act. The Publishers of this book have been involved actively in initiating discussion and debate on this issue among concerned persons for various sections for the society and three meetings have been held so far - in November ' 95 in Pune, in February ' 96 in Dharwad and in April 96 in Pune again. Moreover, these

meetings also have discussed about the WLP Act and need for amendments to make it people-oriented in view of a committee established by the Government of India or even an alternate people oriented act. Also a major workshop on "Eco-Development Project" being founded by Global Environment Facility (GEF) and World Bank is being held in Ooty, Tamil Nadu on August 17-18, 96 as part of this campaign. This will be part of a widespread debate on who should manage nature parks in view of the conflict between tribals and forest officials in Protected Areas(PAs). These developments have also to be viewed in spirit of the enlightened National Forest Policy 1988 adopted unanimously by the Parliament and the Bhuria Committee Report for extending salient features of the 73rd and 74th amendments to the constitution to the tribal areas to facilitate greater control of tribals over forest, land and water. The JVA is working closely with the National Front for Tribal Self Rule for urgent implementation of the Bhuria Committee Report.

As delineated in the Preface, we need to look at, Biodiversity from a broader perspective and our cultural heritage. However, this book is meant to provide some basic articles and documents that would facilitate debate on CBD and related issues so as to contribute towards a people-oriented Biodiversity Policy and Legislation.

Already the campaign has begun with leading peoples' movements, organisations in various parts of the country having initiated various activities during the last eight months with focus on peoples' rights. The activities including padayatras at grass root level to dialogue with Members of Parliament and leaders of political parties have been published in March 1996 as a 120 page entitled "Peoples' Rights over Natural Resources : Putting on the National Agenda". These activities will be intensified during the 50th year of independance campaign and are expected to culminate into a long term movement.

All in all, we have to accept perhaps the greatest challenge to all of us social activists, Scientists and other concerned about the future of this country - to put "Peoples" Rights Over Natural Resources" on the national agenda. Our National Freedom

Movement successfully placed the rights of small farmers ("land to the tiller") and industrial workers on the national agenda but left unfinished the task of "Peoples' Rights over Natural Resources". We must also recognise that it is a challenge that will take not just years but decades of dedicated collective work on the part of all concerned persons from all sectors of society.

ARTICLES

THE CONVENTION ON BIOLOGICAL DIVERSITY - AN OVERVIEW

- S.R. Hiremath And B.J. Krishnan

1. The Historic UNCED Summit held at Rio de Janeiro, Brazil in June 1992 adopted. The Convention of Biological Diversity. The Convention on Biological Diversity, which was signed by 171 countries including India during Rio, has come into force with effect from December 29, 1993. India has ratified the Convention on February 18, 1994 and it has entered into force for India from May 19, 1994 i.e. 90 days after the ratification.
2. The objectives of the Convention are (i) the Conservation of biological diversity, (ii) the sustatinable use of its components and (iii) fair and equitable sharing of benefits arising out of the utilisation of genetic resourses.
3. The preamble of the Convention on Biological Diversity recognises and reaffirms:
   - the intrinsic value of biological diversity;
   - the sovereign rights of States over their biological resources;
   - the fundamental requirement of in situ conservation of ecosystems and natural habitats;
   - the supporting role of ex situ measures;
   - the vital role of local communities and women in the conservation and sustainable use of biological diversity;
   - the desirability of sharing equitably the benefits arising from the use of traiditonal knowledge, skills, innovations and practices;
   - the importance of and the need to promote regional and global cooperation for conservation; and
   - the requirement of substantial investments to conserve biological diversity.

4. Salient Features of the Convention on Biological Diversity

The fundamental requirement of in situ conservation of ecosystems and natural habitats: the supporting role of ex situ measures; biological diversity, the desirability of sharing equitably benefits arising from the use of additional knowledge, skills, innovations and practices; the requirement of sustantial investments to conserve biological diversity.

The Convention, through 42 articles, establishes commitments on conservation, access to genetic resources, transfer of technology, scientific and technical cooperative exchange, benefit sharing and financial resource generation by new and additional financial mechanism, that are likely to make it an extremely important instrument for the conservation of biological diversity of the planet, not only for its own sake but also because of its potential benefit for human beings. The Convention is advantageous to developing countries including India, since, apart from setting up a sharing mechanism for supporting conservation measures, it also provides for technology transfer and capacity building. This would result in various benefits to developing countries from the use of their resources, through new technologies including biotechnology, in the fields of agriculture, forestry, fisheries, pharmaceuticals in industrial applications.

Besides recognizing the sovereign rights of the states over their own biological resources, and their utilization pursuant to their environment policies (Article 3), the Convention advocates the protection and encouragement of the customary use of biological resources in accordance with traditional and cultural practices [Article 10(c)]; and the encouragement and development of method of cooperation for developing and using technologies (including traditional and indigenous technologies) in pursuance of the objectives of the Convention (Article 18). Through its Article 16, the Convention also reognizes that patents and other intellectual property rights may have an impact on the implementation of the Convention. The Convention provides that the Contracting Parties shall cooperate in this regard subject to national legislation and international law to ensure that such rights are supportive of and

do not run counter to its objectives. Through Article 15, the Convention advocates the creation of conditions to facilitate access to genetic resources should be carried out with full participation of the country providing such resources. According to the Convention, countries will take legislative, administrative or policy measures taking into account the provisions of Article 16 and 19. Article 16 and 19 deal with the provisions related to access to and trasfer of technologies and handling of biotechnology, relevant to conservation and sustainable use of biological diversity. Article 22 refers to the rights of the Contracting Parties under other international agreements which shall not be affected except where they cause serious damages or threat to biological diversity.

5. India is one of 12 identified mega-centres of biological diversity. About 45,000 species of plants and 81,000 species of animals have been identified and listed so far as a result of serveys conducted by the Botanical Survey of India and Zoological Survey of India over the years. Of the 15,000 flowering plants, about 33 percent (i.e. 5,000) are endemic to India, and about 10 per cent (i.e. 1,500) are facing various degrees of threat. The biological diversity, resource and environmental systems which support life processes are threatened by population pressure, rapid changes in the hydrological regime, land use pattern, soil degradation, air and water pollution, deforestation, the over expolitation of genetic resources and the adverse impact of developmental projects.

6. Since Convention on Biological Diversity had come into force, and is now an international treaty, India has to establish the appropriate legislative mechanism.

7. The Ministry of Environment and Forests has constituted nine expert groups for preparing reports in order to accelerate the process of conservation and sustainable use of natural resosurces through programmes on scientific lines. These groups cover the following specific areas:
   - Survey, identification and monitoring
   - In situ conservation
   - Ex situ conservation

- Sustainable use
- Access to and transfer of technology
- Research, training and cooperation
- Legal measures

The Ministry has also initiated an exercise for formulation of a National Action Plan on Biodiversity, for which a Core Group of experts has been constituted. A detailed framework of the Action Plan has been prepared and the various action points have been categorised into the followisng five major groups for which identified experts are preparing the Action Plan:

I. Documentation, conservation, research and monitoring
II. Sustainable utilisation, public participation and benefit sharing
III Formulation of policy and planning, generating finances
IV. Institution building activities, technology development programme and human resources development
V Legal measures Biosafety.

8. For the purpose of convenience. biodiversity components can be broadly categorised into five heads.
   1. Wild fauna
   2. Wild flora
   3. Domesticated fauna (livestock)
   4. Domesticated flora (crops and other cultivated plants)
   5. Genetic materials (seeds, eggs, germplasm, semen, etc.)

The legal framework relating to each of these categories of biodiversity components has to be assessed in terms of the followisng 12 aspects of biodiversity:

1. Identification.
2. Protection *in-situ*.
3. Protection *ex-situ*.
4. Access/extraction.
5. Use.
6. Breeding/Cultivation/Multiplication.
7. Trade.
8. Introduction/Augmentation/Re-introduction.
9. Release.

10. Movement.
11. Intellectual property rights.
12. Other related issues.

(Conserving Life - Ashish Kothari)

An analysis of the exsisting central enactments revealed that there are about 40 Acts which are relevant to conservation of biodiversity in India. The Wildlife Protection Act (1972) dealing with in-situ conservation of Protected Areas is an enactment of utmost importance.

9. Comments: The conservation of biodiversity is a pressing responsibility of all people and institutions. Biodiversity conservation includes the sustainable use of its components, especially when used for development purposes.

Sustainable use means, use that does not interfere with the ecological integrity of any living things or their ecosystems and which are socially equitable to people. This implies;

(i) that all members of present and future generations receive a socially-equitable share of an access to the benefits of natural resources:

(ii) that the basic structure of genetic resources and their ecosystem is not depleted by the use of its components; and

(iii) that all life forms are treated in a way that respects their instrinsic, social, aesthetic, cultural, traditional, spiritual, and other values and that our activities do not cause suffering of any living thing.

Conserving biodiversity requires fundamental changes in patterns and practices of socio-economic development worldwide and changes in the mindset of individuals towards a more equal partnership with the earth. It is unacceptable that external debt be exchanged for nature.

The conservation of biodiversity requires a respect for and conservation of the integrity of ecosystems and linkage between diverse ecosystems.

All social groups, governments and enterprises should be fully responsible and liable for the social and ecological damage caused by their technologies and actions to biological and cultural

diversity. Infrastructure projects should be sensitive to impacts effecting local, regional, and global ecological balances. Rehabilitation of degraded ecosystem is essential. Education on the impacts of trade in ornamental, exotic and endemic plant and animal species needs strengthening at international and local levels.

The important roles played by women in managing, caring for, and understanding the components of nature merit particular respect and attention.

The knowledge, cultural traditions, innovations, spirituality, and management practices of indigenous peoples, and traditional practices of farmers, and other rural communities concerning biodiversity are an essential basis for both sustaining biodiversity and sustaining human life.

Domesticated genetic resources are cultural creations, fundatmentally originating from indigenous cultures, peasant cultures and farmers's cultures. The collections and the results of research deposited in national or international agricultural research centres, gene banks or otherwise, should not be the object of restrictions, or in any way be considered as intellectual property.

No patenting should be allowed on any living thing or a product derived from it. However, this does not prejudice the rights or indigenous peoples, traditional farmers and fishermen to maintain exclusive control over, access to, and use of knowledge, innovations, cultural traditions, and management practices concerning biodiversity and the right to just compensation for sharing that knowledge.

Increased resources, technical assistance, and other resources are needed to support groups and countries which are not in a position to do so, to make the necessary investment in the conservation of biodiversity. Increased funding for biodiversity will not, by itself, slow biodiversity loss. Policy, institutional, community, and individual reforms at national and local levels are needed to improve the conditions under which increased resources can be effective and thereby raise public awareness of biodiversity issues.

Social scientists are not of the opinion that the administration

of environmental funds should be handled by the World Bank and, in particular, by the Global Environmental Fund (GEF). Instead, an intergovernmental institution should be established to manage the financial assistance for biodiversity conservation in a transparent and democratic manner.

Increased public participation, respect for human rights, respect for the planet, improved access to education and information, and grater institutional accountability are fundamental prerequisites for effective biodiversity conservation. It requires cooperation between organizations and individuals of all regions. This cooperation must be based on solidarity, independence, transparency, accountability, and respect for cultural diversity.

Any initiatives attempting to divide society by seeking partial alliance between governments and sectors of power should be rejected. Consultation and agreement of all groups involved in conservation action are essential. The Convention rightly stresses the importance of and the need to promote cooperation among stats and intergovernmental organisations and the non-governmental sector for the conservation of biological diversity and sustainable use of its components.

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BIODIVERSITY

FOR A PEOPLE-ORIENTED POLICY *

- S. Gopikrishna Warrier

If the people's elected representatives do not do it, then the people, will do it themselves. This is the message of the process started recently by a network of non-governmental organisations to draw up a comprehensive people-oriented biodiversity policy, which will set forth the general principles for a biodiversity legislation.

The group of NGOs, led by Samaj Parivartana Samudaya from Dharwad (Karnataka), the Save Nilgiris Campaign from Udhagamandalam (Tamil Nadu) and Econet from Pune, has started this process as the Centre has not made much progress in drawing up either a policy or legislation for the protection of the country's diverse biological wealth.

As a signatory to the Convention on Biological Diversity (CBD), finalised at the United Nations Conference on Environment and Development (UNCED), at Rio in June 1992, India has to have in place a biodiversity legislation to protect the country's natural resources.

Though the CBD was signed in 1992, its implications are still not clear to the common man. Even less clear are the implications of the Trade Related Intellectual Property System (TRIPS), which is part of the General Agreement on Tariffs and Trade (GATT), signed by the Narasimha Rao Government; without either a public or a Parliamentary debate.

In the process of developing this document, the people would go through the intricacies of the CBD and TRIPs, which otherwise would have remained part of the esoteric discussions.

The NGO process had its origins at a recent meeting at Dharwad. This meeting sowed the seeds of the idea of a people-oriented biodiversity legislation.

The same NGO network had earlier worked on preparing a

* Article Published in *Hindu - Business Line* dated April 9, '96.

Draft Forest Bill, which later became a full-fledged People's Forest Bill. This document was published widely by this network of NGOs.

Diversity of biological life is nature's gift to the people. This diversity evolved because the Indian sub-continent is spread across the right latitudinal band. And, the seasonal monsoons (which is almost non-existent in the other parts of the world other than the landmass north of the Indian Ocean) provides it with a range of moisture conditions throughout the year.

Due to these conditions, diverse vegetation evolved in various parts of the country - the tropical evergreen of the Southern Western Ghats and the Eastern Himalayas, the dry deciduous of the central plateau, the mangrove swamps of the Sundarbans, the arid vegetation of the hot Thar Desert, the cold desert of Ladakh, and the Alpine meadows of Western Himalayas.

Indian has among two of the world's hotspots of biodiversity - the Southern Western Ghats and the Eastern Himalayas. According to Dr. Satish Nair, in his book on the "Biodiversity of the Southern Western Ghats", there are at least 3,500 species of flowering plants in this small stretch of mountain country.

This is 27 per cent of the flowering plants in the country. There are 84 species of orchids, of which two are endemic. As for the fauna, there are 48 genera of mammals, 275 of birds, 60 of reptiles and several others.

The environmental conditions being unique to India, there is no reason why the existing biodiversity cannot evolve further and enrich itself, both in quality and numbers.

Evolution is a continuing process, and at no point of time can it be said with certainty what would evolve further and enrich itself, both in quality and numbers. This, essentially, is the reason why biodiversity has to be conserved.

Evolution is a continuing process, and at no point of time can it be said with certainty what would evolve from the existing plant and animal species. To put it graphically, had an event in the geological past destroyed the population of chimpanzees, the human species (Homo sapiens) may not have evolved. Thus, this species has an obligation to protect the raw stock from which

future species may evolve.

This truth, however, is forgotten in the dominant Western civilisational belief that all other species have been created for the benefit of mankind.

Stretched a little further, nature is considered an investment opportunity, which would yield monetary returns much higher than what is put in.

From the biological diversity of India has evolved some of the wild ancestors of food crops. These would have remained what they were - wild plants - had not our ancestors realised their value.

Over generations, the agricultural communities evolved the best food qualities in these crops by keeping back the best grain as seed for the next year.

While the agricultural communities developed the best out of the raw stock, the forest-dwelling communities maintained their milieu so that the raw stock itself could survive, and perhaps evolve further. There is a strong correlation between the high biodiversity of the forests and the low consumption pattern of these hunting-gathering communities, which helped them to be prudent vis-a-vis the resources around them.

Even when pastoralists and agriculturists pushed back the frontiers of forests, they developed institututions to protect biodiversity in situ, near their habitation. Sacred groves preserved a microcosm of the original vegetation of the region. Dedicated to deities, and known by various names, such as Kans, or Sarpakavu, in these groves the rural communities preserved for posterity the wealth that nature had bestowed on them.

It was not altruism alone that prompted them to preserve the diversity of life. It was also the realisation that divestity gave stability to ecosystems, essential to sustain the ecological balance of their farm and grazing land.

As ecosystems develop to higher levels of succession, they tend to contain more number of species but lesser numbers in each. One organism (plant or animal) will depend on many others and others will depend on it. If the number of species is reduced then this stability is destroyed.

In the process of conservation, these communities - forest

dwelling, pastoral and agricultural - developed a unique understanding of this natural wealth. A very intersting example, that came to light recently is the knowledge that the hunting-gathering Onge tribals of the Little Andamans have about a plant that can cure cerebral malaria.

While many of the developing countries are biodiversity-rich, almost all of the developed countries face a two-pronged problem. First, the temperate latitudes, where they belong, do not support a great diversity of life forms. Second, what existed has dwindled due to the highly-consumptive lifestyles of the people.

However, what the developed countries have is technology and the financial necessity to convert these natural resources into commercially - markatable products. They also have the political clout to effectively lobby multilateral organisations. They used this lobbying power, through the World Bank and the International Monetary Fund (IMF), to pressure some of the developing countries to structurally adjust' and align their national economies to the global market economy.

The same interests were behind the introduction of an intellectual property rights regime into the Uruguay Round of GATT negotiations, which till then purely dealt with trade.

The extension of the global market argument of these powers is that the raw materials flow to the sites of production, which would either be in the developed or the developing countries. Though never stated openly, the production facilities would incresingly move to the hands of the multinational corporations which have the resources to develop the technologies.

The products manufactured would be marketed in any part of the world. The patent mechanism would privatise the production by ensuring that one corporation did not produce the product developed by the other.

Within this scheme, biodiversity and the related traditional knowledge of its use is seen as a raw material for the industries which can make use of it. The focus is on the protection of interests of those who convert biodiversity into products and not those whose lives depend on the natural resource.

It is this scheme that the NGOs are trying to fight. Their effort is to protect the biodiversity and the diversity-linked intellectual property system (DRIPS) through the biodiversity policy.

They intend to give a voice to the voiceless; start a dialogue from the local to the national level, so that the interests of the people at the grassroots are protected. They also plan to work on demistifying the CBD and TRIPS so that the common man, preoccupied as he is, with issues of survival, can make the linkages as to how these international agreements would affect his day-to-day existence.

By signing GATT (which contains TRIPS)and the CBD, the Government has committed itself to bring in two sui-generis (of its own kind) legislation. One for the protection of patents and plant breeder's rights and the other for the protection of biodiversity and DRIPS.

However, the actions of the Narasimha Rao Government (which signed both these agreements) have clearly indicated its priorities. While it has not taken any initiative since 1992 towards a Biodiversity Act, it had plans of using the ordinance route for a sui generis Plant Protection Act, after the end of the last Parliamentary session.

Though the CBD is as much a political document as the TRIPS, the strong and vociferous action taken by the Government and the NGO representatives at the preparatory meetings to the Rio Summit, and at the summit itself, has led to the inclusion of some provisions that can be used to protect biodiversity and DRIPS.

The CBD, for the first time, recognises genetic resources as a nation's sovereign property. Article 15(1) of the CBD states: "Recognising the sovereign rights of the States over their natural resources the authority to determine access to genetic resources exists with the national Government and is subject to national legislation."

Through the provisions of Article 8(j), the CBD also recognises the role of DRIPS in in situ conservation. It states: "Subject to its national legislation (every Contracting party shall),

respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional life styles relevatn for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices.

The flip-side of this provision, however, is that if the state does not protect the DRIPS through a legislation, then the MNCs and other corporations can exploit this and by minor alterations convert them to private property.

Ironically, an Indian citizen does not need a CBD-based legislation to protect his interests. The Government is duty- bound to protect the people's interests under Article 39 (b) of the Constitution (according to a paper prepared by Dr. N.S. Gopalakrishnan of the National Law School).

This Article says that the state has to direct its policy towards securing equitable distribution of material resources of the community and prevention of concentration of wealth and means of production.

The Government would be violating this fundamental principle, as provided by the Constitution, if it tries to bring in a legislation on patents before it protects the rights of the people through a biodiversity legislation.

Here lies the catch. Governments may be elected by the people; but the people are forgotten soon enough. And so is the Constitution. The people of the country are on their way to reminding the Government about its responsibility to protect their livelihood and natural resources.

MINISTRY OF ENVIRONMENT AND FORESTS

GOVERNMENT OF INDIA

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CONSERVATION OF BIOLOGICAL DIVERSITY IN INDIA: AN APPROACH

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CONTENTS

		Foreword
Chapter	1	Introduction
Chapter	2	Physical Features
Chapter	3	Richness of Indian Biological Diversity
Chapter	4	Threats to Biological Diversity
Chapter	5	Conservation Measures and Work Towards National Biodiversity Action Plan
Chapter	6	The Convention on Biological Diversity Follow-up Action
		Annexures

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Introduction

1.1 India is a land of Physical, ecological, biological, social, cultural and linguistic diversity. Over the centuries, the people of India have had close linkages with nature. They believed that each individual life form is part of a system in close relation with other systems. It is also of interest that what are possibly the world's first recorded conservation measures were enacted in India in the 3rd century B.C. during the reign of the Emperor Ashoka.

1.2 The ethos of conservation is ingrained in India's cultural heritage. In the past, the subsistence lifestyles of different groups of people were shaped by their natural surroundings. In different parts of the country, people adopted different ways of sustainable use of natural resources. The cultural diversity of the Indian people helped to maintain a range of biological diversity. and also increased the natural diversity by the introduction of selected species. In doing this, the people in different parts of the country have evolved apporopriate conservation and management approaches based on their culture, religion, ethics and traditions. For example, the unique tradition of maintaining sacred groves has been responsible for preserving islands of biological diversity in various parts of the country. The protection of biological diversity for not simply cultural, historical or scientific reasons, but also for very practical reasons, has also been part of our people's philosophy and actions.

1.3 This paper attempts to outline the physical features and the richness of bilogical diversity in India, as also the factors leading to its loss, conservation measures, follow-up action on the Convention of Biological Diversity, and future priorities for conservation.

2. Physical Features

2.1 The Indian landmass, extending over a total area of 329 million hectares, is located between 6 and 38 N latitudes and

69 and 97 E longitudes. India's rich biological diversity is a result of its diverse physical features and climate, and the natural evolution of a variety of phytogeographic conditions. The Indian landmass, bounded by the Himalaya in the North, the Bay of Bengal in the east, and the Arabian Sea in the West, consists of three well-defined regions:

a) the trans-Himalayan mountainous zone including the North- Eastern Hill Ranges:
b) the Indo-Gangetic Plain; and
c) the Peninsula (including the Eastern and Western Ghats and the Vindhya-Satpura Ranges)

2.2 The Himalaya, with a total area of nearly 100 million hectares, dominates the floristic estate of the entire Indian subcontinent. Flowering plants had evolved and diversified in the Late Creataceous, and have had vigorous mechanisms of dispersal compared to the plant groups that had arisen earlier. The relatively young Himalayan mountain ranges opened up new southward routes of migration and colonization into what had hitherto been an island. At the eastern end, through the "Assam gate" came the Chinese and Malayan elements. From the west came some Palaearctic and Ethiopian elements. The Himalaya acted as a two-way highway linking West Africa to South East Asia. In the peninsula, there may have also been a crossover point between the Southern Western Ghats and the Eastern Hills.

2.3 Besides being a highway for living species, the Himalaya also deflect the rain-bearing clouds into the region, controlling the rainfall regime, and thence the environmental conditions and life in the subcontinent. In the peninsula, the rainfall pattern is also governed by the Western Ghats.

2.4 The greater part of Northern India and the coastal areas are characterized by alluvial soil, formed by the silt carried down by the rivers. Black cotton soil occurs mainly in the western parts of the country. Red soil covers a major portion of the peninsula and is also found in some other areas. Laterite, derived from the weathering of rocks, is common in the higher hills of the Deccan including the Eastern Ghats and

the North- Eastern region.

2.5 Based on factors such as the physiography, bioecology, soil type, rainfall and the duration of the growing season, the country has been divided into 21 agro-ecological regions, which are further divided into 52 sub-regions.

2.6 The Indian climate has three major seasons: winter (November - February), summer (March-June) and monsoon (July-October), with considerable variation in temperature and rainfall. Four climatic regions are recognised based on rainfall: a heavy rainfall area in North-Eastern India and the West Coast, with some parts of Assam receiving 1100 cm annually; a moderately high rainfall area along the eastern peninsular plateau extending into the Indo- Gangetic plain and eastwards into the coast, with about 150 cm annually, a low rainfall area in the Punjab plain and Central India upto the western Deccan, East Karnataka and western Andhra Pradesh, where the rainfall is about 75 cm a year; and a nominal rainfall area in the hot desert areas of Rajasthan and Gujarat, and the cold desert of the Ladakh plateau, receiving 10 cm annually. Of the total 400 million hectare metres (mham) annual precipitation that India receives, approximately 150 mham percolates into the soil, 180 mham joins the surface flow and 70 mham evaporates.

2.7 Although most of the country is situated north of the Tropic of Cancer, India has a tropical monsoonal climate. It depends for rains on monsoons which originate south of the Equator and on winter rain caused by western disturbances originating in the Mediterranean. The pressure conditions of the Indian Ocean which regulate the wind direction are also associated with the pressure conditions of the East Pacific Ocean. Thus, most of the climatic conditions in India originate elsewhere.

3. Richness of Indian Biological Diversity

3.1 India's immense biological diversity encompasses ecosystems, populations, species and their genetic make-up. This diversity can be attributed to the vast variety in

physiography and climate situations resulting in a diversity of ecological habitats ranging from tropical, sub-tropical, temperate, alpine to desert. As a result, according to world biogeographic classification. India represents two of the major realms (the Palaearctic and Indo-Malayan) and three biomes (Tropical Humid Forests, Tropical Dry/Deciduous Forests, and Warm Deserts/Semi Deserts). These include 12 bio geographic regions.

3.2 Recently, the Wildlife Institute of India has proposed a somewhat modified classification which divides the country into 10 bio geographic regions: Trans-Himalayan, Himalayan, Indian Desert, Semi-Arid, Western Ghats, Deccan Peninsula, Gangetic Plain, North-East India, Islands and Coasts. India is one of the 12 identified mega-biodiversity centres. It also has two of the 18 identified hot spots-the Eastern Himalaya and the Western Ghats.

3.3 The number of plant species is estimated to be over 45,000, representing about 7 per cent of the world's flora. These are categorised in different taxonomic divisions including over 15,000 flowering plants. Estimates for the lower plants are: 64 gymnosperms, 2843 bryophytes, 1012 pteridophytes, 1940 lichens, 12,480 algae and 23,000 fungi.

3.4 Some 4,900 species of flowering plants are endemic to the country (141 genera distributed over 47 families corresponding to about 30 per cent of the total). Among the endemic species, 2,532 species are found in the Himalaya and adjoining areas, followed by 1,782 species in Peninsular India. About 1500 endemic species are facing varying degrees of threat.

3.5 The faunal wealth is equally diverse. The total number of animal species is estimated at 81,000, representing about 6.4 per cent of the world's fauna. India's animal diversity includes over 5,000 molluscs and about 57,000 insects, besides other invertebrates. There are 2,546 fish, 204 amphibians, 428 reptiles, 1,228 birds and 372 mammals. The extent of endemism is very high, about 62 per cent.

3.6 Very little is as yet known about the extent of the diversity of

micro-organisms, particularly of bacteria and viruses. Consolidated data on bacteria and viruses are to be compiled. Detailed surveys have to be completed of aquatic biota related to the 14 major, 44 medium and 55 minor river systems.

3.7 The marine habitat covers and area extending along 7,500 km of coastline extending over 200 nautical miles in the off-shore forming the Exclusive Economic Zone (EEZ). An area of 2 M sq.km. of marine ecosystem is expected to harbour vast living resources of molluscs, crustacea, fish turtles and planktons.

3.8 India is also considered one of the world's 12 centres of origin of cultivated plants. India's rich germ-plasm resources, include 51 species of cereals and millets, 104 species of fruits, 27 species of spices and condiments, 55 species of vegetables and pulses, 24 species of fibre crops, 12 species of oil seeds, and various wild strains of tea, coffee, tobacco and sugarcane.

3.9 There are several hundred species of wild crop relatives distributed all over the country especially in the Western and Eastern Himalaya, in the West Peninsula and the Malabar Coast, in North-Eastern India, the Gangetic Plains and the Indus Plains, and in the East Peninsula/Deccan Plateau. A major centre for wild rice is the Eastern Peninsular area. Wild maize occurs in the humid and semi-humid tracts of the East and West Peninsular areas extending to North-Eastern India. Wild millets are found in the North-Eastern Hills and the Tamil Nadu hills. Wild relatives of wheat and barley have been located in the Western and North- Western Himalayas.

3.10 The ancient practice of domesticating animals has resulted in India's diverse livestock, poultry and other animal breeds. This is a significant percentage of world diversity. India's eight breeds of buffalo represent the entire range of the genetic diversity of buffaloes in the world. Besides, there are 26 breeds of cattle, 40 of sheep, 20 of goats, 8 of camels, 6 of horses, 2 of donkeys and 18 types of poultry. Yak, Mithun, geese and ducks have also been domesticated.

4. Threats to Biological Diversity

4.1 There are manifold causes for the loss of biodiversity. Among these are the rapid expansion of industry and agriculture, urbanization and large scale development projects like dams, highways, mining, and increased expansion and intensification of human activities. These activities have led to destruction of habitats, pollution and overutilisation of biological resources, which have resulted in the rapid erosion of India's biodiversity.

4.2 Destruction of habitats, poaching and trade of wildlife products have severely threatened many of the wild species. About 20 species are categorized as 'possibly extinct', as these species have not been sighted during the last 6-10 decades. In this century itself, the Indian cheetah, the pink-headed duck and the mountain quail have become extinct. 81 species of mammals, 47 birds, 15 reptiles, three amphibians and a large number of butterflies, moths and beetles besides 1,500 plant species are considered vulnerable and endangered. Unfortunately, illegal trade still continues in ivory, rhinoceros horns, musk, peacock feathers, snake skins and certain threatened plant species.

4.3 Serious genetic erosion has taken place in domesticated species of plants and animals mainly because of the introduction and promotion of a few introduced 'high-yielding' varieties of crops and livestock. Thousands of varieties of rice, millets, oilseeds, vegetables and legumes have been lost and several breeds of domesticated animals and birds are threatened. The number of threatened breeds include: 3 breeds of cattle, 7 of sheep, 5 of goats, 5 of camels, 4 of horses and all breeds of poultry.

5. Conservation Measures and Work towards National Biodiversity Action Plan

Subsequent to the signing of the Convention on Biological Diversity of India, the Ministry of Environment and Forests has

initiated an exercise for formulation of a National Action Plan on Biodiversity.

The central objective of this will be to maintain as high a level of ecosystem, species and genetic diversity in the country as possible, by a combination of actions listed in the following sections.

5.1 CONSERVATION

Conservation of Wild and Domesticated Biodiversity: These conservation efforts are done through a combination of *in situ* and *ex situ* efforts.

5.1.1 *In situ* Measures:

Forest and Pasture Lands

Conventionally, the forests have been managed with three objectives in mind: First, to produce good quality timber, while maintaining the productive capacity of the soils; second, to sustain forest productivity indefinitely and, therefore, to regulate felling so as not to exceed forest growth; and third, to ensure continuity in management practices so that a forest crop is allowed to mature, and the factors influencing growth are subject to stable conditions.

The Forest Policy was first enunciated under British rule in 1884. After Independence, a new forest policy was set out in 1952. In keeping with the more recent perceptions, the forest policy was enunciated once again in 1988, with the following objectives:

- environmental stability
- conservation of genetic resources
- soil and water conservation
- increasing the forest cover by afforestation on currently barren lands
- checking the extension of sand dunes in desert areas
- meeting the requirements of the rural and especially tribal population for fuelwood, fodder, minor forest produce, and small timber
- increasing the productivity of forests to meet essential needs
- efficient utilization and maximizing substitution of

wood.

Strengthening the Effort

Efforts need to be made to encourage the continuation and revival of traditional forestry practices which are consistent with conservation priorities.

Activities on forest lands, which lead to loss of biodiversity, including habitat destruction, overexploitation, and introduction of exotics, must be minimized and eliminated.

With regard to domesticated biodiversity, a network of areas devoted to conservation needs to be created, to ensure 'on-farm' or 'in-use' conservation of crop and livestock diversity.

Activities which lead to loss of domesticated biodiversity, including loss of agricultural lands and grasslands, and introduction of exotics, must be minimized and eliminated.

The restablishment and revival of crop and livestock diversity in areas where it has been eroded, including by repatriation of germplasm from *ex situ* facilities into *in situ* conditions, needs to be encouraged.

India's pasture lands are less than 0.5 per cent of the world's, but support 13 per cent of the world's 3 billion heads of domesticated animals. The huge deficit in the availability of green fodder has led to increasing of grazing in forest lands: some 90 million animals graze in the forests.

Cooperation for Conservation: Joint Forest Management is one of the successful schemes for conservation of forest areas. Implemented in certain states, it has shown very encouraging results. This is because the strategy ensures participation of people in both afforestation and managing the forest areas. Ecodevelopment activities are designed to meet people's needs, such as fuelwood, fodder etc., without putting too much pressure on forest lands.

India's Green Cover :

India has a distinct and varied vegetation. From the tropical, wet evergreen forests of the Andaman and Nicobar islands to dry alpine forests of the himalaya. Within this wide range are semi- evergreen forests, thorn forests,

sub-tropical broad-leaved hill forests, sub-tropical pine forests, mountain temperate forests and alpine meadows. The recorded forest area is 77.01 million ha. But not all the recorded forest has adequate tree cover. According to Landsat imagery for 1993, the area covered by forest is 64.01 m.ha.

Today, India has less than 2 per cent of the total forest area in the world, but supports 15 per cent of the world's population. The per capital forest area has decreased from 0.20 ha. in 1951 to 0.11 ha. in 1981. By comparison the average per capita forest area for the world is 0.80 ha. (figures for some other countries are : Canada 14.20 ha, U.K. O.40 ha, Australia 7.60 ha, China 0.13 ha., Nepal 0.30 ha.). The current productivity of India's forests is 0.70 cu.m. per ha. year. A recent survey carried out in 1993 by the Forest Survey of India has shown that forest cover has increased by 2,200 ha., taking the percentage of land under forest to overall land area to 19.47

Conservation Area Network

India has a long history of *in situ* conservation of fauna, in conservation areas. These protected areas are concerned with selected keystone species of both ecological and aesthetic value, including those which have become endangered due to significant degradation in their habitats. A commendable effort has been made in this direction in restoring a viable population of important animals such as the tiger, lion, rhinoceros, crocodile and snow leopard.

However, the critical problem is not merely that of the conservation of a particular species or habitat; it is the continuation of the very process of evolution itself. In order to ensure the unhindered evolution of micro-organisms, plants and animals in their totality, and as part of the natural ecosystems, the Government of India has designated eight biosphere Reserves. These are based on the comprehensive concept of conservation, evolved by the UNESCO's Man and Biosphere (MAB) Programme initiated in 1971.

In recent years, programmes have also been launched for ecological research and for protection of fragile systems, including wetlands, mangroves and coral reefs.

While the Protected Area Network has made a commendable contribution to conserving the animal species in situ, it has not, so far, made efforts towards conserving micro-organisms, lower groups of plant and animal species and higher plant species. There is a need to integrate these important components of biodiversity conservation into the management of protected areas.

An imaginative programme for in situ conservation of biological diversity involving local communities has been developed in recent years. Recognizing both the ecological and economic value of biodiversity, the programme is called 'ecodevelopment'. The concept of ecodevelopment, in brief, is that the protected areas can be ecologically sustained only through effective management and improvement of surrounding regions. Local communities are extensively associated with the maintenance of earmarked regions surrounding protected areas. This ensures not only better incomes and employment but also the steady availability of forest and related produce. A project for the protection, in this manner, of eight Tiger Reserves is being processed for international assistance.

Strengthening the Effort

The network of protected areas has to be further consolidated in order to ensure the conservation of representative ecosystems and biogeographic units, of viable populations of species, and populations of wild plants and animals.

Conservation of biodiversity outside the network of protected areas, including the sensitive/rich ecosystems like coral reefs, mangroves, wetlands; on private property; on common lands; and in waterbodies has to be ensured.

Encouragement must be provided for the continuation and revival of traditional practices which are consistent with conservation priorities.

Wildlife/ecosystem management practices have to be reoriented away from singel-species or large animal focus, towards

biodiversity conservation.

Activities which lead to loss of biodiversity, including habitat destruction, overexploitation, pollution, poisoning, and introduction of exotics, must be minimized and eliminated.

Special programmes need to be initiated for hitherto neglected species and ecosystems, including lower plants and animals and micro organisms.

Regeneration and restoration of degraded ecosystems and the re- establishment of viable populations of threatened species needs to be encouraged.

Regional co-operation for conservation of ecosystems and species needs to be initiated between India and the countries of the region, including SAARC and ASEAN countries, Myanmar and China.

Protected Areas : With the setting up of the Indian Board for Wildlife in 1952, and the enactment of the Wildlife Protection Act, 1972 (amended in 1991), the protected area network has been further strengthened. Today, we have 75 National Parks and 421 Sanctuaries covering 140,675.46 sq km area (about 4.2 per cent of the total geographic area). The Wildlife Institute of India has recommended that the number of protected areas be increased to 148 National Parks and 503 Wildlife Sanctuaries, covering 4.6 per cent of the total land area. The proposed network will significantly reduce the gaps in the various biogeographic units and biomes.

Special Care: A National Committee on Wetlands, Mangroves and Coral Reefs, established by the Ministry of Environment, Forests and Wildlife, has identified 21 wetlands, 15 mangroves and 4 coral reef areas (Gulf of Mannar, Kachchh, the Andaman & Nicobar and Lakshadweep Islands) for conservation and scientific management.

Six internationally significant wetlands of India have been declared as 'Ramsar sites' under the Ramsar Convention (1981). These are: Harike (Punjab), Wullar (J&K), Loktak (Manipur), Keoladeo (Rajasthan), Chilka (Orissa), and Sambhar (Rajasthan).

Under the World Heritage Convention, five natural sites

have been declared as 'World Heritage Sites'. These are: Kaziranga National Park (Assam), Manas Wildlife Sanctuary (Assam), Sunderbans National Park (West Bengal), Nanda Devi National Park (Uttar Pradesh) and Keoladeo National Park (Rajasthan).

The Tura Range in Garo Hills (Meghalaya) has been proposed as a gene sanctuary for preserving the rich native diversity of wild Citrus and Musa species. Sanctuaries for rhododendrons and orchids have been established in Sikkim.

Holistic Projects: Project Tiger, which was launched in 1973, is spread over 23 Tiger Reserves in a total area of 30,497 sq km. By 1993, it had succeeded in increasing the tigern population to 3750. Project Elephant, launched in 1991-92 aims at ensuring long term survival of identified viable populations and tackling the problematic elephant populations causing serious depredation. The Project provides for restoring the lost and degraded habitats of elephants, mitigating man-elephant conflict and establishment of a database of the migration and population dynamics of elephants. It would also aim at improving the quality of life of people living around elephant habitats, through sustainable development. Rhinos have been given special attention in selected Sanctuaries and National Parks in North-East and North-West India.

In India, there is no sharp dichotomy between wild and domesticated ecosystems or species. Densely populated human habitats are intermingled with the wild in the form of sacred groves or sacred species.

In Situ and *ex situ* conservation measures are therefore in a continuum and display a wide diversity of approaches, spanning from ancient traditions to new initiatives for the protection traditions to new initiatives for the protection of wild habitats, medicinal plants and domesticated crops and livestock.

Conservation of Every Farm: Traditional Indian agricultural systems have been modelled on the complexity and diversity of natural forests. A rich diversity of species and varieties of crops have been the basis of agricultural production. Rapid genetic erosion has occured over the past

few decades as a result of introduction of 'Green Revolution' varieties of crops. Initiatives by non-governmental organisations (NGOs) such as Samvardhan and the Navdanya Network have initiated programmes for the conservation of agricultural biodiversity, for the establishment of community seed banks and for encouraging *in situ* conservation by farmers. These are complementary to the *ex situ* collections held in national and international gene banks.

The Tradition of Health Care: Indian systems of medicine have, over millennia, recognized the medicinal use of several species of plants. The use of over 7000 species have been conserved. Spiral ecosystems with high medicinal plant diversity have been protected as sacred forests. Species like *Tulsi*, useful for many common ailments, are conserved through propogation in every home. Building on these ancient traditions, networks like Lok Swasthya Parampara Samavardan have taken new initiatives to revitalize indigenous health traditions and conserve the medicinal plant diversity that provides its material resource base for diverse medicinal systems.

The Cultural Conservation: India has a rich tradition of respect for and conservation of diversity of life. These traditions are responsible for the presence, of hundreds of thousands of ficus trees such as *banyan* and *peepal*, now recognized by ecologists as a significant keystone resource. They have permitted the persistence of macaque and langur monkeys and peafowl in the midst of villages and towns.

Such traditions have also protected entire biological communities in sacred groves and sacred ponds. For instance, a few years ago, scientists of the Botanical Survey of India discovered a new species of a leguminous climber, *Kunsterlia keralensis* in a sacred grove in the densely inhabited plains of Kerala.

What is most encouraging is that these practices are today being adapted to the modern secular context. Thus, many shifting cultivator communities from the north-eastern states of Manipur and Mizoram have revived protection to sacred groves as safety

forests serving as large belts of firebreaks encircling their villages.

5.1.2 *Ex situ* Conservation

To complement the efforts made for *in situ* conservation, considerable attention has been paid to *ex situ* conservation of biological diversity in India. There are 33 Botanical Gardens, and 33 University Botanical Gardens. There are also 275 areas of *ex situ* wildlife preservation, including 107 zoos, 49 deer parks, 13 safari parks, 6 snake parks, 24 nature/education/breeding centres and 6 aquaria.

Some of the major zoos have made significant achievements in captive breeding of endangered or endemic species. For better management of zoos, the Government of India has recently set up the Central Zoo Authority.

Strengthening the Effort

Public (governmental) network of zoological and botanical gardens, herbaria, aquaria, gene-seed-gamete-embryo banks and other facilities for *ex situ* conservation, need to be consolidated in order to make this complementary to and supportive of *in situ* conservation.

A network of culture collections for micro-organisms, including a central respository, needs to be established.

A network of private botanical and zoological gardens and other ex situ collections need to be set up, while ensuring their compatibility with overall conservation objectives.

It needs to be ensured that *ex situ* collections of wildlife are used primarily for the purpose of captive breeding and multiplication of threatened species for reintroduction into the wild, and for the purpose of public education. Effective means of achieving these objectives have to be encouraged.

With regard to domesticated biodiversity, a network of gene/seed/semen banks and other *ex situ* facilities for crops and livestock has to be established and consolidated, in order to make it complimentary to and supportive of in situ conservation.

Effective means of multiplying crop and livestock varieties for reintroduction into *in situ* conditions need to be encouraged.

The creation of community seed and other banks managed

and controlled by local communities and individuals needs to be encouraged.

Preserving Genes: The collection and preservation of genetic resources is done through the National Bureau of Plant Genetic Resources, New Delhi, for wild relatives of crop plants; the National Bureau of Animal Genetic Resources, Karnal, for domesticated animals; the National Bureau of Fish Genetic Resources, Lucknow, for economically valuable fish species.

5.2 Policy, Planning and the Legal Framework

The Indian Constitution enshrines the concept of environmental protection through the Section on Directive Principles of State Policy. This assigns duties for the State and all citizens through Articles 48A, and Article 51 A(g), which state that the "State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife in the country". and "to protect and improve the national environment including forests, lakes, rivers, and wildlife, and to have compassion for the living creatures". There are also numerous and wide-ranging policies, programmes and projects which directly or indirectly serve to protect and conserve biological diversity.

The legal and policy framework includes the Forest Act, 1927; the Forest (Conservation) Act, 1980; the Wildlife (Protection) Act, 1986. These are supported, in the different States, by a number of laws and statutes related to the management of land, water, forests and other habitats (Major Central Acts which are directly or indirectly related to conservation of biological diversity are annexed.) India is also a signatory to the Convention on International Trade in Wild Species of Endangered Flora and Fauna (CITES) to effectively regulate / ban trade in these species.

The National Conservation Strategy and Policy Statement for Environment and Sustainable Development (1992) outlines policy actions required to give greater attention to the conservation of biological diversity. The National Forest Policy, as amended in 1988, stresses the sustainable use of forests, and the need for greater forest cover in ecologically fragile (but biologically rich)

areas such as mountain and island ecosystems. The National Wildlife Action Plan (1993) sets out the priorities for wildlife conservation. The protection of habitats and valuable ecosystems is among the major considerations in the environment impact analysis carried out by the Ministry of Environment and Forests. The National Afforestation and Eco-Development Board of the Ministry undertakes the large scale rehabilitation of degraded forest lands in the country through the State governments.

For this purpose, the Board also provides necessary financial support.

The Government of India have evolved the 'Recombinant DNA Safety Guidelines' and have notified these under the Environment (Protection) Act 1986, for personnel and environmental safety in the use of genetically manipulated organisms in research, manufacture and applications.

Strengthening the Effort

a) At the Policy Level

the Framing of a National Biodiversity Policy, dealing with conservation and sustainable use of biodiversity and the equitable sharing of benefits from such resources is a priority for India.

There is need for reorientation of natural resource use and development policy including agricultural, industrial, forestry, fisheries, mining, export and import (including introduction of exotic genetic material), science and technology, and the new economic policy, to ensure integration of biodiversity concerns.

b) With Regard to Legislation

A National Biodiversity Act, with provisions for the conservation and sustainable use of biodiversity, and for the quitable sharing of benefits arising out of such use, needs to be enacted.

Existing laws and provisions relating to biodiversity components, including forestry, fisheries, mining, agriculture, industry, etc. need to be reviewed and amended to integrate biodiversity concerns and to bring them in line with the proposed National Biodiversity Policy and Act.

Existing laws also need to be reviewed and amended in order to ensure: the guaranteeing of community land rights and other rights in consonance with conservation and sustainable use objectives; and the flow of adequate returns to local communities for the wider use of their resources and knowledge/skills relating to biodiversity; for ensuring adequate and meaningful public participation in decisions and actions relating to biodiversity, at national, state and local levels; and for ensuring openess transparency and accountability in all relevant institutions.

Legislation has to be enacted for enforcing national sovereignty over the country's biodiversity, and to ensure adequate returns for the use of this biodiversity by foreign agencies.

Legal provisions have to be made for the enforcement of other aspects of the proposed Action Plan, for fixing penalties and liability in events of significant biodiversity loss, and for assessing compensation in such events.

Local level database repositories need to be recognized as legally valid for purposes of claiming compensation, ensuring fair returns and credit for the use of local knowledge and resources, and for other measures to ensure conservation and sustainable use of biodiversity, and equitable profit sharing.

c) With Regard to Planning

Land use planning at the national, state, and local levels needs to be reoriented to integrate biodiversity concerns, especially by ensuring that areas important for biodiversity conservation are not diverted for other activities, and by superimposing political planning units with regional planning units such as river basins and watersheds.

Planning for the use of natural resources (including forests, wetlands, minerals, fisheries etc.) has to be reoriented at all levels, to integrate biodiversity concerns, ensure that such use does not cause significant and irreplaceable loss of biodiversity.

Biodiversity concerns need to be integrated into environmental impact assessment procedures for all activities, programmes and policies likely to have a significant impact on biodiversity, with mandatory participation of people affected by

these.

A system of natural resource accounting has to be developed which integrates biodiversity concerns, and gives suitable weightages to the diverse value of biodiversity at local, regional and national levels.

Using the National Action Plan as a framework, action plans at local, stagte and regional levels need to be developed for biodiversity conservation and sustainable use, in a fully participatory manner.

5.3 Technology Capacity

India is unique in that many traditional technologies co-exist with modern technologies and systems of management. These include traditions of technologies in health care, agriculture, fisheries, livestock management, agriculture, fisheries, livestock management, wetland and wildlife management as well as folk traditions and diverse systems of medicine, including ancient traditions of Ayurveda, Siddha and Unani, Indian systems of medicine have contributed to the development of modern medicines such as the drug Reserpine (*Rauwolfa serpentina*) used in the control of hypertension.

India also has one of the largest science and technology communities in the world, with a well-developed capacity in new technologies. Recently, many important facilities have been developed by the Department of Biotechnology (DBT) which have made positive contributions to conservation.

Technologies for Conservation: Recent developments in facilities for in situ conservation include:

Germplasm facilities
Tissue culture pilot plants
Biocontrol agents
Biofertilizers
Clean technologies
Bioinformatics

Safety Measures: Under the Recombinant DNA Safety guidelines formulated by the Government of India, the constitution of the Institutional Biosafety Committee (IBSC)

is mandatory. The main functions of the IBSC include: registration with the IBSC; monitoring of compliance of safeguards as stipulated in the guidelines and review of the ongoing activities in view of the safety aspects examination of new proposals in the areas covered by the guidelines and the categorization based on the assessment of incremental risk.

In order to enable researchers to have access to information and experience accumulated on biosafety aspects, a 'database' on DNA projects is being compiled. This would benefit the scientists in formulating safety measures and also assist the competent authorities in decision making processes.

The Review Committee on Genetic Manipulation (RCGM) is a reviewing authority and is responsible for issuing clearance for import/export of etiologic agents and vectors, germplasms, organelle, etc needed for experiments, training and research.

The Genetic Engineering Approval Committee (GEAC) examines and issues the clearance from the viewpoint of environmental safety on a case-by-case basis for large scale activities/release of genetically modified organisms into the environment.

Biological Controls : A biocontrol network programme of 35 R&D projects is being implemented at various institutions/universities throughout the country. The main objectives of this biocontrol programme are developing better cost-effective formulations, and commercially viable production technology for the production of sufficient quantity of each of the biocontrol agents for use under Integrated Pest Management. The efficacy of biocontrol agents, has been demonstrated in farmer's fields at multi-locations. Mass production technologies have been developed and perfected in the case of eight candidate biopesticides.

Based on the successful innovative technology development of biopesticides and the demonstration of its efficacy in DBT sponsored R&D projects, two Biological Control Units have been set up by Biotech Consortium India Ltd. These two units have

served as a model for private entrepreneurs and farmers who have taken up this venture.

The expression of biotechnological toxing genes in transgenic plants holds promise both as an alternative and complementary method of insect control. Transgenic cotton plants that express protein known to be toxic to bollworm pests, are being developed under a major programme.

Germplasm Facilities

Recognizing the role of sophisticated facilities for research and development, and for providing services, several national germplasm facilities have been set up:

i) The National Facility for Microbial Type Culture Collection at the Institute of Microbial Technology, Chandigarh, with over 1,600 cultures in its stock.

ii) The National Facility on Blue Green Algal Collection at the Indian Agriculture Research Institute, with over 500 strains, and several pure cultures as well as soil based cultures, which have been supplied to farmers for production of biofertilisers.

iii) The National Facility for Marine Cyanobacteria at the Bharatidasan University, Tiruchirapalli, which is coordinating extensive surveys on the southern coast.

iv) The National Facility for Plant Tissue Culture Repository at the National Bureau for Plant Genetic Resources (NBPGR), New Delhi, which has undertaken in vitro conservation of germplasm (seed, pollen in vitro culture) over the medium and long term, particularly for those species for which conventional methods are inadequate. It has 650 accessions of crop species, and employs molecular methods of characterization and classification.

v) The National Facilities for Laboratory Animals at the Central Drug Research Institute, Lucknow, and the National Institute of Nutrition, Hyderabad have made available quality animals for biomedical research and industry, in the country.

vi) The National Facility for Animal Tissue and Cell Culture, Pune, an autonomous institution under DBT, has 1127 stock cultures comprising 594 different cell strains. The facility has supplied 401 culture consignments to 84 institutions throughout

the country. It also has 50 vectors, plasmids and genomic libraries.

vii) Three National Gene Banks for Medicinal and Aromatic Plants at the Central Institute of Medicinal and Aromatic Plants. Lucknow; and the NBPGR, New Delhi, both for the northern region; and the Tropical Botanical Garden and Research Institute, Trivandrum, for peninsular India have been established. These banks will conserve important species of proven medicinal value, which are categorized as endangered, threatened or rare, which are used extensively in traditional systems of medicine, are difficult to propagate, have significance for R&D for the future, and are of commercial value. Training facilities will also be offered. India is the overall coordinator for the esgtablishment of Gene Banks of Medicinal and Aromatic Plants among G-15 countries.

Tissue Culture Facilities: Tissue culture pilot plant units have been established at the National Chemical Laboratory. Pune, and the Tata Energy Research Institute, New Delhi, for the large scale multiplication of forest tree species. 400,000 plantlets have been sent for field demonstrations to seven State Forest Departments. About 150 ha. have been field planted. In addition, plant tissue culture laboratories have also been set up by several organizations such as BSI, ICFRE and its institutes, G.B. Pant Institute of Himalayan Environment and Development, and Andhra Pradesh Government.

Biofertilisers: The management of biological systems through biotechnological interventions has an important role in maintaining soil health and ecological stability. In order to develop a strong R&D base in this area, a project has been launched on the technological development and demonstration of biofertilisers, blue green algae (including Azolla) and Rhizobium. Technological packages have been developed, such as polyalkene bioreactor designs.

Clean Technologies for Pollution Control: DNA probes for the detection of anti-amoeba, PCR techniques for the detection of viruses, and ELISA techniques for the detection of pathogenic bacteria have been developed. These are being evaluated in different parts of the country.

Microbial strains for desulphurisation of fossil fuels have been identified. The mocrobial production of hydrogen as well as synthesis of chemicals from wasters and agro-residues is under process.

Clean Technologies for Biodiversity Conservation: For the conservation of diversity of mangroves and other important endangered plants, protocols for species-specific isolation of DNA have been developed, and are being standardized.

Bioinformation: The Biotechnology Information Systems cover 10 distributed information centres and 21 sub-centres. The network has linked the major institutes and universities to share valuable biological and biotechnological information resources. This is in addition to Environmental Information System (ENVIS), which has 17 centres for information collection, collation, storage, retrieval and dissemination.

5.4 Documentation, Research And Monitoring

5.4.1 Surveys

Surveys of the floral and faunal resources in the country are undertaken by the Botanical Survey of India (BSI) established in 1890, and the Zoological Survey of India (ZSI) established in 1916. BSI and ZSI have their headquarters in Calcutta and a network of centres located all over India. The Surveys now have a total personnel of 2500 and an annual budget of nearly Rs.2. billion. The Forest Survey of India, established in 1981 uses satellite imagery, aerial photography and ground truth verification to assess forest wealth, in order to develop an accurate data base for planning and monitoring. Their reports are published in Floras, Faunas, etc., at the district, state and national level, besides Red Data Books on threatened/endangered/endemic plant and animal species, for planning suitable conservation measures.

Strengthening the Effort

Special efforts need to be made to identify and survey areas and ecosystems important for biodiversity conservation.

Development and continuous updating of Watch Lists at local and state levels, and Red Data Books at national level, on threatened elements of biodiversity, including wild plants and animals, crops and livestock, and ecosystems, need to be done.

The preparation of biodiversity maps for localities, through the participation of local communities and individuals, and for large biogeographic/regional/national units through specialized agencies, needs to be undertaken.

Surveying the Wealth : The Botanical Survey of India (BSI) and the Zoological Survey of India (ZSI) act as scientific authorities for CITES, Ramsar, CMS and IUCN in India. The services of the Surveys have been offered to other countries over the last several decades. Biosystematic studies of specimens from Bhutan, Nepal, Bangladesh, Pakistan, Burma, Sri Lanka, have been aided by these scientists. Besides, Saudi Arabian, Australian, West European, North American material have also been worked out by the scientists for some specific groups, e.g., insects, mites, molluscs. The scientists of these Surveys have been participating in bilateral and multilateral expeditions in the region.

5.4.2. Research

The Ministry of Environment and Forests funds several research projects in universities and research institutes, on several aspects of environmental conservation, and on specific ecosystems such as wetlands, mangroves and biosphere reserves, on speciies-level diversity, ecosystgems-species interaction, etc.

Strengthening the Effort

The relationship of biodiversity with culture, economy, polity, and the other aspects of society, to assess the positive and negative feedback between them, needs to be studies.

Special research efforts have to be initiated in hitherto neglected areas including lesser plants and animals, mocro-organisms, and human-influenced ecosystems.

Major factors threatening biodiversity need to be identified, documented and constantly monitored.

Traditional and folk knowledge, skills, practices and beliefs which are relavent to biodiversity must be identified and documented with the active involvement and consent of the holders of this knowledge.

The characterisation and evaluation of biodiversity, especially the identification of the present and potential social, economic and ecological values of each component of biodiversity has to be undertaken.

Mechanisms for and comparable methods of monitoring the impacts of conservation and utilization of biodiversity on a continuous and long-term basis need to be worked out. New methods of biodiversity conservation and sustainable use need to be developed.

All these measures need to be carried out in a decentralized and location-specific manner, in order to promote and ensure broad- based participation in the effort and to promote a symbiotic relationship between formal and folk systems of knowledge.

Regional co-p[eration in research and monitoring must be promoted.

Multi-disciplinary Research: Under the MAB Programme, an integrated, multi-disciplinary and multi-disciplinary and multi- institutional 'All India Coordinated Research Project on Ethonobiology' is being carried out. The project would generate and document the knowledge system of the tribals in the country, and their resource utilization pattern.

5.5 Human Resource Development

Many institutions and non-governmental organizations are involved in creating awareness about various aspects of biodiversity, and in education and training on varied subjects such as wildlife conservation, exploration, systematics, inventorisation and the management of flora, fauna, forest resources, Himalayan environment, etc.

Action has been taken to offer training facilities in areas of conservation of biological diversity, wildlife management, ecological impact assessment, etc, to countries in South East Asia,

the Far East and other developing countries.

The Ministry of Environment and Forests has also established two centres of excellence the Centre for Environment Education and the C.P.R. Environmental Education Centre to develop programmes and materials to increase awareness about the environment.

Strengthening the Effort

Efforts need to be made to generate mass awareness on biodiversity issues by the use of mass media, folk art forms, and other communication methods and mechanisms.

Information and experiences related to conservation and use of biodiversity need to be shared and disseminated across all segments of society.

Information held by government and related agencies needs to be made accessible through guaranteeing public right to such information.

School, college and university students and teachers need to be involved in actvities relating to research and conservation, especially in the documentation and conservation of local biodiversity and of people's use/knowledge relating to this biological diversity.

Teacher training programmes must incorporate biodiversity concerns.

Syllabi and methods of school, college, university education and other professional courses need to be reoriented to incorporated biodiversity concerns, especially through means such as first- hand fieldwork.

Relevent departments in universities and professional institutions need to be strengthened for research and monitoring purposes.

Training programmes for all government services, including administrative, foreign, forestry and other services, need to be reoriented to integrate biodiversity concerns.

In-service training and orientation programmes for government officials and independent professionals need to be developed.

Special orientation programmes need to be developed for politicians, lawyers, judges, economists, customs officials, and other such hitherto neglected sectors.

Special programmes with groups outside the purview of formal education need to be developed. Such programmes should draw upon and be sensitive to the knowledge and rich conservation traditions of these groups.

The traditional and modern scientific and technological base for the use of biodiversity needs to be strengthebned, to optimise its value and benefits.

Reliable and simple field guides for the entire range of plant and animal taxa need to be developed and made widely available in appropriate languages.

Capacity Building: Many national institutes are conducting research and imparting training on varied subjects such as wildlifeconservation, exploration, systematics inventorisation, and the management of flora, fauna, forest resources, Himalayan environment, etc. These institutes include the Wildlife Institute of India, the Botanical Survey of India, the Zoological Survey of India, the Forest Survey of India, the Indian Council of Forestry Research and Education, the G.B. Pant Institute of Himalayan Environment and Development, the Salim Ali Centre of Ornithology and Natural History, and the Centre for Ecological Sciences, Indian Institute of Science. Besides, there is also a reservoir of scientific and technological talent in various research institutes, universities and centres of excellence. (See Annexure for list of some of the prominent institutes/agencies working in the area of biological diversity.)

Action has been taken to offer training facilities in areas of conservation of biological diversity, wildlife management, ecological impact assessment, etc. to countries in South East Asia, the Far East and other developing countries.

5.6 People's Participation and Sustainable use of Biological Resources

India has a rich tradition of people's participation and of folk practices for the conservation of biodiversity. The symbiotic relationship between folk traditions and modern scientific institutes needs to be enhanced to enrich both.

It is recognized that effective conservation can take place only if there are effective and equitable ways of using the components of biodiversity in a sustainable manner, and ways of sharing the benefit accuring from conservation of biodiversity with local communities. There is increasing consciousness of the fact that such conservation with sustainable use is possible only with the involvement and co-operation of local communities in the effort, and for this the development of institutional structures at local and other levels is necessary. Many steps are being taken in this direction.

Strengthening the Effort

a) Towards Utilisation of Components of Biodiversity:

The sustainable use of components of biodiversity in all sectors, including agriculture, animal husbandry, fisheries, forestry, industry, and other economic activities needs to be promoted.

The value of biodiversity components must be enhanced by developing innovative and optimal uses which are ecologically and culturally sustainable.

Traditional and other folk uses of biodiversity components which are ecologically sustainable need to be revived and encouraged.

Technological and other means (including safe and socially acceptable biotechnologies) to achieve efficient and sustainable use of biodiversity components, including access to appropriate technologies from outside the country, must be promoted and developed.

Measures to minimise and eliminate unsustainable utilisation of biodiversity components need to be initiated. These could

include the provision of alternatives to such utilisation.

b) Towards Sharing of Benefits:

Equitable access to biodiversity, keeping in mind the interests of national sovereignty and the rights of local communities, needs to be ensured.

The equitable distribution of benefits arising from the use of biodiversity components, in particular guaranteeing fair returns to traditional communities for their past, and continuing contribution to the conservation, development, and maintennace of biodiversity must also be ensured.

Means of ensuring that a share of the benefits from the commercial utilisation of biodiversity components is guaranteed as returns to local communities, for their continuing conservation, development, and maintenance of biodiversity must be found.

Measures must be taken to gain access to the biodiversity held in national and international ex situ collections (including seed/gene banks, botanical gardens, musea, etc.) outside the country, especially in the case of germplasm taken from India and stored outside, and to a share of the benefits being generated from the international use of this germplasm.

Measures at bilateral, regional, and international levels, to ensure that benefits generated by the transfer of genetic material are equitably distributed, and that countries of origin are adequately rewarded also need to be taken.

c) Towards strengthening institutional structures:

Appropriate institutional structures (governmental, private, and community) at local, state, and national levels, for the purposes of carrying out the necessary actions need to be created, encouraged or revived.

The network of research and monitoring agencies and individuals, both governmental and non-governmental, and involving both formal and folk knowledge systems, to ensure the implementation of the actions suggested, specially under 'Documentation, Research and Monitoring', needs to be created.

A decentralized cadre of formal and folk taxonomists and ecologists needs to be developed and encouraged to carry out

exercises of mapping, inventorying, and monitoring biodiversity, especially by promoting a symbiotic relationship between formal and folk systems.

Structures for participatory management of protected areas and other conservation areas, involving as equal partners, government agencies and local communities, and as supportive partners non- governmental organisations and independent scientific and cultural institutions, must also be created.

Coordinating mechanisms for institutional structures at local, state and national levels, with the aim of promoting conservation and sustainable use of biodiversity, need to initiated and encouraged.

National, state, and local level database repositories need to be consolidated. These would be used both for information storage, as also to act as nodal bio-resource centres for information dissemination and other relevant activities. Their creation and management should ensure coordination and complementariness between the repositories, full public participation, and respect for the informal knowledge system.

A network of biodiversity conservation and sustainable use extension workers, for the purposes of carrying out the actions needs to be created.

Greater coordination and cooperation between different agencies of the government, towards achieving biodiversity conservation and sustainable use, needs to be ensured.

6. The Convention on Biological Diversity-follow-up Action

6.1 During the historic UNCED Earth Summit held at Rio de Jeneiro in Brazil in June 1992, the following important documents were adopted:

- Rio Declaration
- Agenda 21
- Non-legally Binding Principles of Forests
- Framework Convention on Climate Change
- Convention on Biological Diversity

– Agreement to negotiate a Convention on Desertification.

6.2 While the two Convention are legally binding international instruments for the Parties, the first three documents are non- binding. The Convention on Desertification has been negotiated since then and India has signed this Convention on 14 October 1994.

6.3 The Convention on Biological Diversity, which was signed by 171 countries including India during Rio and thereafter, has entered into force with effect from 29 December 1993. India has ratified the Convention on 18 February 1994, and thus it has come into force for India from 19 May 1994, i.e., 90 days after the ratification.

Salient Features of the Convention

6.4.1 The 23 preambular paragraphs of the Convention on Biological Diversity recognise and reaffirm:

- the intrinsic value of biological diversity;
- the sovereign rights of States over their biological resources;
- the fundamental requirement of in situ conservation of ecosystems and natural habitats;
- the supporting role of ex situ measures;
- the vital role of local communities and women in the conservation and sustainable use of biological diversity;
- the desirability of sharing equitably the benefits arising from the use of traditional knowledge, skills, innovations and practices;
- the importance of and the need to promote regional and global cooperation for conservation; and
- the requirement of substantial investments to conserve biological diversity.

6.4.2 Through its 42 Articles, the Convention, by recognising national sovereignty over biological resources (Article 3) calls for facilitation of access to genetic resources on 'mutually agreed terms' and with 'prior informed consent' of the country providing these, with a commitment on the recipient country to share in the benefits of utilising the resource thus

provided (Article 15).

The Convention also calls for transfer of relevant technologies, including biotechnology, on 'fair and most favourable terms, from the developed to the developing nations, who mainly are the providers of genetic resources (Article 16). It also calls on the private sector to facilitate access to and transfer of such technologies developed by them (Article 16.4). The Contracting Parties are to cooperate in this regard to ensure that patents and other intellectual property rights are supportive of and do not run counter to the objectives of the Convention (Article 16.5). The Convention commits the Parties to consider an international protocol for safe transfer, handling and use of any living modified organism resulting from biotechnology (Article 19.3). The Parties are also to take measures for facilitating access on a fair and equitable basis, on mutually agreed terms, to the results and benefits arising from biotechnologies based upon genetic resources transferred (Article 19.2). The developed Country Parties are committed to contribute to a fund to enable developing Country Parties to meet the 'agreed full incremental costs' for implementing the provisions of the Convention (Article 20.2). This financial mechanism is to 'operate within a democratic and transparent system of governance' and 'function under the authority' of the Conference of Parties (Article 21).

6.5 Follow-up Actions

6.5.1 From the foregoing, its amply clear that the Convention is a revolutionary document of far-reaching significance that envisages a reciprocity of arrangements between developed and developing nations to ensure a more harmonious, secure and sustainable future through conserving and sustainably utilising the biological wealth of the planet. However, the ultimate results of this Convention would depend upon the follow-up and implementation. The Ministry of Environment and Forests, which is the nodal unit in the Central Government for issue related to the Convention on

Biological Diversity, has set into motion several follow-up actions.

6.5.2 Subsequent to the signing of the Convention by India, extensive consultations. were organised at the national and state levels to analyse the implications of the provisions of the Convention. As a result, 50 action points were identified for implementation at the national, state and local levels. Of these, 26 action points require the active participation of NGOs for their implementation.

6.5.3 "The Ministry of Environment and Forests had constituted nine expert groups for preparing reports in order to accelerate the process of conservation and sustainable use of natural resources through programmes on scientific lines. These groups cover the following specific areas:

- Survey, identification and monitoring
- *In situ* conservation
- *Ex situ* conservation
- Sustainable use
- Access to and transfer of technology
- Research, training and cooperation
- Legal measures
- Strengthening impact assessment procedures

6.5.4 In addition, a comprehensive status report on biological diversity in India is under preparation, since as of now there is no such report available for the country. The status report which would cover the various facets of biodiversity conservation is being compiled by the Indian Institute of Public Administration for the Ministry. The report is in two volumes. Volume I contains an overview of the status of biological diversity in India, as also the broad strategy for its conservation. The second volume, which is three parts, contains texts of the papers contributed by the various agencies and

experts. The drafts of the Volume I and II have been prepared and are being finalised for publication.

6.5.5 The Ministry of Environment and Forests had organised deliberations with prominent NGOs in January 1994 in New Delhi, under the chairmanship of the Minister for Environment and Forests. Further, a series of regional level consultations on biodiversity was organised through the regional offices of the Ministry involving the concerned departments and agencies of the State Governments, experts and NGOs in Lucknow, Bhopal, Bhubaneshwar, Guwahati, Chandigarh and Bangalore.

6.5.6 An analysis of the 24 existing Central laws relevant to biological diversity has revealed that there are significant gaps to the existing legal/regulatory measures. Keeping in view the provisions of the Convention, the main elements for inclusion in a comprehensive act on biodiversity are being identified following deliberations with the concerned Ministries, Departments and Government and non-government agencies.

6.5.7 In the light of the provisions of the Convention, deep concern has been expressed over the free movement of genetic material from our country, which continues unhindred in the absence of a comprehensive legal framework to regulate it. Since the regular enactment on biodiversity would take some time, it was considered appropriate to undertake immediate steps to regulate the transfer of indigenous genetic material. In view of this, the Ministry is working on an Order, in consultation with the Directorate General of Foreign Trade and the concerned Ministries, to be issued by the DG (FT) under the Export Import Policy which is published under Section 5 of the Foreign Trade (Development & Regulation) Act, 1992. This Order seeks to regulate the transfer of indigenous genetic

material occuring within the country through the notified authorities which are the expert agencies of the government for different categories of genetic material. This Ministry has approached the notified authorities to formulate detailed operational/administrative guidelines for faciliting the implementation of the Order.

6.5.8 The Ministry has initiated an exercise for formulation of a National Action Plan on Biodiversity, for which a Core Group of experts has been constituted. A detailed framework of the Action Plan has been prepared and the various action points have been categorised into the following five major groups for which identified experts are preparing the Action Plan:

I. Documentation, conservation, research and monitoring.
II. Sustainable utilisation, public participation and benefit sharing
III. Formulation of Policy and Planning, Generating finances
IV. Institution building activities, technology development programme and human resources development
V. Legal measures, Biosafety.

6.5.9 Keeping in view the fact that many components of biological diversity are common among neighbouring countries as natural ecosystems are spread over political boundaries, and that several of the floral and faunal species are endemic to this region, the Ministry of Environment and Forests with support from UNEP had organised an official level meeting among SAARC, ASEAN and other countires of the region, in Bangalore on 22-23 August 1994. The main objective of this International Consultation was to evolve mechanisms for regional cooperation on issues related to biological

diversity keeping in view the provisions of the Convention. Senior officials from 11 countries of the region namely, Afghanistan, Bangladesh, Bhutan, India, Japan, Malaysia, Maldives, Myanmar, Philippines, Tbhailand and Vietnam participated in the Consultation. In addition, observers from several international organisations, some NGOs, State Government officials, eminent scientists and experts also participated. During the Consultation, a Bangalore Declaration, which was drafted as a result of extensive deliberations in the two Working Groups, was adopted by the participant countries. The Bangalore Declaration calls upon the national governments to undertake activities for conservation and sustainable utilisation of biological diversity, keeping in consonance with the provisions of the Convention. The International Consultation thus marks the first stip towards further cooperation for biodiversity conservation in the Asian region which is uniquely blessed with rich biological diversity.

6.5.10 India had earlier contributed significantly in the seven integovernmental sessions for negotiating the Convention on Biological Diversity prior to the Rio Conference. Subsequently, Indian delegations have participated actively in the two sessions of the Intergovernmental Committee on the Convention on Biological Diversity (ICCBD), held in Geneva in October 1993 and in Nairobi in June 1994, for preparing for the first meeting of Conference of Parties (COP) to be held in Nassau, the Bahamas from 28 November to 9 December 1994. The first meeting of the COP is the most significant event since the Earth Summit as far as the Convention on Biological Diversity is concerned. The Ministry has therefore worked with various governmental and non-govenrmental agencies to finalise India's stand on the various substantive issues to be deliberated upon in the Bahamas meeting.

4213

COMMUNITY HEALTH CELL
LIBRARY
AND
DOCUMENTATION

Scientific Traditions

The Apatanis, who live in Ziro, at an elevation of 1572 m., in the north-eastern state of Arunachal Pradesh, have evolved a system of rice cultivation which has the highest energy efficiency of any in the region, and is favourably comparable to any modern system anywhere in the world.

The system is innovative in many ways. Several small streams and springs occur in the hills of Arunachal Pradesh. The Apatanis tap these sources by making temporary walls which act as barriers and channel the flow of water towards the terraces that they make. The length of the barriers are not constant, but adjusted according to the width of the channel. Multi-directional channels are made from the main channel to provide sufficient water to all plots. Water flow is controlled through a system of bamboo sluices. Local drains merge with this water management system to form part of an overall irrigation system, thereby improving the nutrient quality of the water. A system of drains is provided to receive water from the irrigation plots and channel it into the river.

The community works together to maintain and improve this water delivery system. The village cheif raises funds from the beneficiaries to maintain the channels. Besides this, each beneficiary also devotes a few days towards cleaning and maintaining the channels.

Two varieties of rice are grown by the Apatanis-- an early maturing variety and a late maturing one. The early ripening variety is grown in plots which are further away from the village habitat because of poor water availability in the latter stage of the crop, and because of the fear of attack of wild animals.

Aquaculture is also practiced in these fields, and millet seeds are sown along bunds separating the plots. Apatanis also use rice husk from the previous year's harvest to prepare their land.

Non-governmental Initiatives

The Directory of Environmental NGOs brought out by the Vorld Wide Fund for Nature-India (WWF-I) in 1989 lists about 850 NGOs working in this field in India, but there are probably atleast our times this number. Many of these are involved in biodiversity onservation programmes. These NGOs range from clubs which ncourage and assist in adventure travel, exploration, and issemination of knowledge about an ecosystem, to agencies which leal with issues like wastelands development, afforestation, joint orest management, etc. They may be as small as groups of two or hree people, or as large as organisation with an eight thousand trong membership.

One of the most important signs of enviornmental awareness n India is the rise of people's movements which are challenging existing socio-political structures and development models, and are showing alternative paths. These have led not only to action at the grassroot level, but are also helping to shape developmental policies.

Conservation as a Way of Life

Down history, it has not only been those with power who have protectecd and preserved India's natural heritage. Common people have been as involved. An example is that of the people of the Bishonoi faith, founded towards the end of the fifteenth centry. Bishnois emphasize non-violence and respect for all living things. They actively protect wildlfe and do no permit hunting or felling of trees in their areas. In 1730, the Maharaja of Jodhpur ordered his men to fetch timber from a Bishnoi area. The Bishnois hugged the trees to save them from the axemen, and over 360 of them, mostly women and children, were hacked to death before the king's men gave up. Even today, Bishnoi lands stand apart as oases in the vastness of the desert of Rajasthan.

The tradition continues. The Chipko movement, active since 1973, has been one of the most successful examples of people oriented environmental restoration. The brave method of hugging trees to save them was adopted. This movement, in which women

played a key role, led to the cancellation of tree-felling programmes in parts of the Himalaya.

(Read with Rule 5 of Environment (Protection) Rules, 1986)

iii) Prevention and control of hazardous substances, including their manufacture, use, release, and movement [3(2), 7,8]

ANNEXURE

Major Relevant Provisions of Central Acts Relating to Biodiversity

1. Agricultural and Processed Food Products Export Development Authority Act, 1985/1986

1) Promotion and regulation of export of agricultural products specified in schedules - includes medicinal plants

2. Agricultural Produce (Grading and Marking) Act, 1937

1) Fixing grade designations to indicate quality of any specified agricultural produce (3a,b)

ii) Prohibition or restriction on trade in wrongly marked /garded produce (3g)

iii) Extension of such provisions to any other article (including non-agricultural articles) [6]

3. Cardamom Act, 1965

Provisions as in Rubber Act (see below); includes seeds. Provision for prohibiting/restricting export/import of cardamom [2I]. Applicable to *Elettaria cardamomum maton*, but extendable to any other plant notified by Cardamom Board [3].

4. Coconut Development Board Act, 1979

As in Rubber Act, Tea Act, Cardamom Act, etc.

5. Customs Act, 1962

i) Regulation or prohibition of import and export of specified articles [21]

ii) Regulation of import-export specifically for:

a) The protection of human, animal or plant life or health [1] (t)]

b) The conservation of exhaustible natural resources [11(m)]

iii) Regulation of transportation and storage of notified items [11(j, k, l, m)].

6. Destructive Insects and Pests Act, 1914

i) Prohibition or regulation of import of any "articles" which may cause infection to any plant [3](1)]

ii) Prohibition or regulation of movement, between states within India, of articles likely to cause infection to any plant [4A]

Note: "articles" includes insects and plants

7. Environment Protection Act : 1986

i) General measures to protect environment [3(i)]

ii) Restriction of industrial and other processes / activities in specified areas [3(2)(v)]

foundation seeds: and certified seeds of high quality,and for improved methods of cultivation.

8. Fisheries Act, 1897

i) Prohibition on use of explosives for fishing [4(1)]

ii) Prohibition use of poisons for fishing [5]

iii) Regulation fishing in private waters, with consent of owners / right holders [6(2) & (3)]

iv) Prohibition of all fishing in specified waters for maximum 2 years [6(4)]

9. Forest Act 1927

i) Setting up and managing reserved forests [Chapter II]

11) Setting up and managing village forests [Chapter III]

iii) Setting up and managing protected forests [Chapter IV]

iv) Protection on non-government forests and lands (Chapter V]

v) Control of movement of forest produce [Chapter X]

vi) Control of grazing or trespass by cattle in forest land [Chapter X]

10 Forest (Conservation) Act, 1980

i) Prohibiting or regulating non-forest use of forest lands [2]

11. Import and Export (Control) Act, 1947

i) Prohibition or restriction on imports and exports of specified items [3]

ii) Regulations on transportation of specified items [4e]

12 Marine Products Export Development Authority 1972

i) Establishment of an Authority for developing and controlling marine products [4,9(I)]

iii) Developing and regulating off-shore and deep-sea fishing; taking measures for conservation; fixing standards for export; regulating exports [9(2a,c,f)]

13 Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act 1980

i) Regulation of fishing in India's EEZ by people using foreign vessels [3]

ii) Permits only to be granted within definition of public interest, and for scientific research, experiments, etc. [5(3), 8]

14. National Dairy Development Board Act, 1987

i) Establishment of a Board which promotes dairy development and other agriculture based industries [4, 16(la)]

ii) Financing and facilitating animal husbandry, agriculture, high yielding cattle (including import of semen) milch animals and bulls and general enhancement of cattle wealth [16(1)]

15. National Oilseeds and Vegetable Oils Development Board 1983

1) As in Rubber Act etc., special focus on providing farmers, esp. small farmers, benefits from development of oilseeds industry [9(2)a]

ii)

Assistance for production and development of breeder's seeds.

16. New Seed Development Policy, 1988

17. Prevention of Cruelty to Animals Act, 1960

1) Restrictions of cruel treatment of animals, including use, transportation, and trade [chapter III, and Rules under section 38]

ii) Restrictions on use of animals for purposes of experimentation and performances [chapter IV & V)

18. Rubber (Production and Marketing) Act, 1947

1) Establishment of Indian Rubber Board, with function of developing/encourging improved rubber cultivation and marketing, advising or import/export [B(I) & (2)]

ii) Restrictions on right of rubber planters -licence required to plant or replant, where to plant, etc [17]

Note: Appllicable to 4 species of rubber initially, more if Board so notifies [Definitions]

19. Seeds Act, 1966

i) Regulation on quality of seeds of notified food crops, cotton, and fodder, to be sold for agricultural purposes [5,6]

ii) Restriction on export/import of notified seeds [12]

iii) Exemption to persons selling/delivering, on own premises, seeds grown by them [24]

20. Species Board Act, 1986

As in Rubber Act, etc., for cardamon; for other spices, restricted to export-import development and regulation

21. Tea Act, 1953

As in Rubber Act, etc., includes restrictions on export of tea seeds [17]. Applicable to one species, *Camellia sinensis*, presumably to all its varieties.

22. Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act, 1976

i) Estblishment of sovereign rights over waters and seabed within the continental shelf and exclusive economic zone (200 natural miles from nearest appropriate point on Indian territory) [3(1). 5(I), 6(2), 7(4)]

ii) Sovereign right to explore, exploit, conserve and manage resources of continental shelf and EEZ [6(3), 7(4)]

iii) Notification of any area within this zone for purposes of protection and resources and conservation of marine environment [6(5), 7(6)]

23. Tobacco Board Act, 1975

As in Rubber Act, Tea Act, Cardamon Act. etc.

24. Wildlife (Protection) Act, 1972 and Wildlife (Protection) Amendment Act, 1991

i) Restriction or prohibition on hunting of animals [Chapter III]
ii) Protection of specified plants [Chapter IIIA]
iii) Setting up and managing sanctuaries and national parks [Chapter IV]
iv) Setting up of zoo authority, control of zoos, and captive breeding [Chapter IVA]
v) Control of trade and commerce in wild animals, animal articles and trophies [Chapter V & Chapter VA]

List of major insitutions involved in conservation of biological diversity

A) Affiliated with Ministry of Environment & Forests

Botanical Survey of India, Calcutta
Zoological Survey of India, Calcutta
Forest Survey of India, Dehradun
Wildlife Institute of India, Dehradun
Indian Council of Forestry Research & Education, Dehradun
National Museum of Natural History, New Delhi
Indian Institute of Forest Management, Bhopal
Institute of Forest, Genetics and Tree Breeding, Coimbatore
Institute of Moist Deciduous Forests, Jorhat

- Institute of Wood Science and Technology. Bangalore
- Institute of Deciduous forests, Jabalpur
- Forest Research Institute, Dehradun
- Institute of Arid Zone Forestry Research, Jodhpur
- Salim Ali Centre for Ornithology and Natural History, Coimbatore
- G.B. Pant Institute of Himalayan Environment & Developmment, Almora
- Central Zoo Authority, Delhi
- Centre For Ecological Research and Training, Indian Institute of Science, Bangalore
- Central Pollution Control Board, New Delhi
- Centre for Environment Education, Ahmedabad

- Centre for Mining Environment, Dhanbad
- National Zoological Park, New Delhi
- Padmaja Naidu Himalayan Zoological Park, Darjeeling.

(B) Affiliated to Indian Council of Agricultural Research

- National Bureau of Plant Genetic Resources, Delhi
- National Bureau of Animal Genetic Resources, Karnal
- National Bureau of Fish Genetic Resource, Allahabad
- Indian Institute of Horticulture Research. Bangalore
- Indian Vaterinary Research Institute, Izzatnagar
- Central Arid Zone Research Institute, Jodhpur
- Jute Technological Research Laboratories. Calcutta
- National Dairy Research Institute, Karnal
- Central Research Institute for Dry Land Agricultural, Hyderabad.
- Central Rice Research Institute. Cuttack
- Central Sheep and Wool Research Institute, Avikanagar
- Central Tuber Crops Research Institute, Trivandrum
- Directorate of Pulses Research, ICAR, Kanpur
- Indian Institute of Sugarcane Research, Lucknow
- Central Tobacco Research Institute, Rajahmundary
- Central Plantation Crops Research Institute, Kasargod
- National Centre for Mushroom Research and Training, Solan
- Central Institute of Horticulture for Northern Plains. Lucknow
- Central Institute for Research on Buffaloes,Hissar
- Central Institute for Research on Goats, Mathura
- Central Agricultural Research Institute, Port Blair
- Central Avain Research Institute, Izzatnagar
- Central Inland Captive Fisheries Research Institute, Barrackpore
- Central Institute for Cotton Research, Nagpur
- Central Institute of Brackish Water Aquaculture, Madras.
- Central Institute of Fisheries Education, Bombay
- Central Institute of Fisheries Technology, Kochi
- Central Institute of Freshwater Aquaculture, Bhuvaneshwar
- Central Potato Research Institute, Simla
- Central Research Institute for Jute and Allied Fibres,

Barrackpore

- Directorate of Oilseeds Research, Hyderabad
- Indian Agricultural Research Institute, New Delhi
- Indian Grassland and Fodder Research Institute, Jhansi
- National Research Centre for Cashew, Puttur
- National Research Centre for Citrus, Nagpur
- National Research Centre for Sorghum, Hyderabad
- National Research Centre for Soyabean, Indore
- National Research Centre for Spices, Calicut
- National Research Centre for Camel, Bikaner
- National Research Centre for Coldwater Fisheries, Nainital
- National Research Centre for Equines, Hissar
- National Research Centre for Yak, Dirang
- Affiliated with Council of Scientific & Industrial Research
- All Regional Research Laboratories
- National Botanical Research Institute, Lucknow
- National Chemical Laboratory, Pune
- Central Marine Fisheries Research Institute, Cochin
- National Institute of Oceanography, Goa
- Central Drug Research Institute, Lucknow
- Central Institute of Medicinal and Aromatic Plants, Lucknow
- Birbal Sahni Institute of Paleobotany, Lucknow
- Central Inland Captive Fisheries Research Institute Barrackpore
- Central Institute of Fisheries Education, Bombay
- Centre for Cellular and Molecular Biology, Hyderabad
- Indian Institute of Immunology, Delhi
- Central Food Technological Research Institute, Mysore
- Institute of Microbial Technology, Chandigarh
- National Environment Engineering Research Institute, Nagpur
- Indian Institute of Chemical Biology, Calcutta

- Indian Council of Medical Research
- Central Council for Research in Unani Medicine, Delhi
- Central Council for Research in Ayurveda and Siddha, Delhi

(E) **Non-government Organisations**

- M.S. Swaminathan Research Foundation, Madras

- Centre for Science and Environment, New Delhi
- Development Alternatives, New Delhi
- Bombay Natural History Society, Bombay
- Worldwide Fund for Nature (WWF) India, New Delhi
- Kalpavriksha, New Delhi
- Kerala Shastra Sahitya Parishad, Trivandrum
- Tata Energy Research Institute, New Delhi
- Research Foundation for Science, Technology & Natural Resource Policy, Dehradun

(F) Academies/Societies

- Bombay Natural History Society, Bombay
- Indian National Science Academy, Delhi
- Indian Academy of Science, Bangalore
- National Academy of Science, Allahabad
- Indian Mycological Society, Delhi
- Indian Society for Plantation Crops, Kasaragod
- Indian Society for Advancement of Insect Science, Madras
- Indian Soceity for Fisheries Technology, Bombay
- Indian Soceity of Seed Science and Technology, Delhi
- Indian Botanical Society, Delhi
- Indian National Science Congress Association, Calcutta

"When any environmental issue is probed to its orgins, it reveals an inescapable truth - that the root cause of the crisis is not to be found in how men interact with nature, but in how they interact with each other; that to solve the environmental crisis we must solve the problem of poverty, racial injustice and war; that the debt to nature which is the measure of the environmental crisis, cannot be paid, person by person, in recycled bottles or ecologically sound habits, but in the ancient coin of social justice."

Barry Commoner
in *Ecology & Social Action*

DIVERSITY RELATED INTELLECTUAL PROPERTY RIGHTS GATT FINAL ACT, THE CONVENTION ON BIOLOGICAL DIVERSITY AND THE CHALLENGES*

Dr. N.S. Gopalakrishnan**

Towards the end of this century, the globe has witnessed two important international understandings[1] of significant impact on the survival of two-thirds of humanity during the beginning of the next century. While the "GATT Final Act" of the recently concluded Uruguay round of GATT negotiations is an attempt to rewrite the GATT paradigm for the benefit of the transnational corporations at the behest of developed countries, the Convention on Biological Diversity based on the Rio Summit is the attempt to conserve the depleting earth's biological wealth from the indiscriminate use for commercial purposes by the transnational corporations and its equitable distribution to the people. It appears that in the name of rectifying the defects in the existing world trading system, the developed countries who have realised the limitations of free market economy, facing recessions, and losing control over the trade in goods are trying to expand the GATT regime to trade in technology, services, capital, trade related intellectual property rights, etc., for their own advantage at the cost of developing countries.[2] This is going to have unforeseen consequences for the growth and development of the third world countries. This also forces many countries to undergo radical changes in the model of development followed by them.

One of the major fall out of the developmental model based on/free market economy followed by the developed world in the commercial exploitation of the eco-system. This resulted in the alarming rate of destruction of natural habitate, biological organisms and genetic varieties. The consequence is the destruction of traditional farming systems and the livelihood of people who were surviving on the biological diversity. The wider consequences

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are the potential danger to the environment as well as the survival of humanity. If one looks at the consequences following out of the trading system, the developed countries are responsible for the destruction of the eco-system as well as the trading system. Unfortunately, the developing and the least- developed countries have to bear the burden.

One of the crucial issues that came up for consideration in these agreements was the question of how to deal with "knowledge". It is needless to emphasise the role played by the transnational corporations during the last two decades in commercialisation of knowledge in the name of intellectual property rights. In this process, they disregarded the traditional knowledge systems, destroyed the existing knowledge systems, culture and practices and tried to homogenilse the newly generated knowledge for commercial gains. They deliberately and constantly undermined the knowledge and culture of the traditional and indigenous people. These were considered by them as common property for exploitation. On the contrary, the results based on their exploitation of the 'common knowledge' is considered as private property for further exploitation. In today's world, these big corporations are the owners of these new knowledge. They use it exclusively for profit motive and in the process the majority of humankind is kept outside the benefit of the new knowledge.[3] Thus in this process of creation of new knowledge for commercial purposes of creation of new knowledge for commercial purposes and the improvement of the quality of life, the majority of the humankind are not only deprived of the new knowledge generated, but also of their traditional knowledge system. It is this conflict that one could clearly see in the two recently concluded international agreements. The attempt in this paper is to identify the provisions in these two agreements which have a bearing on commercialsation of knowledge in the area of biological diversity in the name of intellectual property rights and to find out its impact on the people who preserved this genetic material from generation to generation. There will also be an attempt to identify the possible alternatives to protect the traditional knowledge system from being taken away without being adequately rewarded.

On a persual of the background of the Convention on Biological Diversity it is clear that it was a compromise between the interest of the gene rich south and the technology rich north.[4] The major concern of the Rio Submit was the protection of the rights of the people who are the custodians of the bio-diversity on the one hand and the constant demand of the technology-rich developed countries backed by big transnational corporations for access to this genetic material for research and commercial exploitation for profit. They are also concerned with the protection of the new technology through intellectual property rights. On a plain reading of the convention it is clear that while there are clear and specific provisions[5] in the convention for the protection of the intellectual property rights of the technology-rich, one has to scan through many provisions to articulate the traditional rights what may be termed as the Diversity Related Intellectual Property Rights (DRIPs) of the people who are the custodians of the genetic materials.

If one looks at the Preamble to the Convention, it is clearly stated that the rights of the indigenous and local communities over biodiversity must be recognised. This includes the preservation of their traditional lifestyles depending on the biological resources and also sharing with them the benefits arising from the use of traditional knowledge, innovations and practices.[6] It is also significant to note that the State must recognise the role of women in particular in the conservation and sustainable use of the biological diversity.[7] Thus, while one could clearly articulate the importance and significance of recognising the diversity related intellectual property rights of the people who are preserving the biological diversity, there is no mention in the Preamble as to the need for protecting the trade related intellectual property rights of the exploiters of biological diversity. Though there is no mention of protection of rights of the technology holders in the Preamble, the objectives of the Convention attempts to make a balance between the rights of the owners of the genetic material and that of the technology holders who could exploit the resources. It is clear from the objectives that while recognising the right over the resources, there is an emphasis on the importance of protecting the rights of

the user of the resources.[8]

One of the significant provisions in the Convention recognising and attempting to protect the traditional knowledge system is Art. 8 or *in-situ* conservation of the biological diversity. According to Art. 8(j), there is an obligation on the part of the Contracting Parties, i.e., States, to respect, preserve and maintain the knowledge, innovations and practices of indigenous and local communities embodying traditional life styles for the purpose of conserving and sustainable use of biological diversity. It is also mandatory on the part of the State to take permission from the holders of these traditional knowledge system before it is extended for wider application to conserve and sustainable use of biological diversity. The Article also mandates the State to ensure the equitable sharing of the benefits derived out of the utilisation of the traditional knowledge to the owners of the knowledge. Of course, this is subjected to national legislation. It is also clear from the provisions on sustainable use of components of biological diversity 10 that the state has an obligation to protect the rights of the people and encourage the customary use of biological resources in accordance with traditional cultural practices.

It appears that the import of this provision is the power and obligation of the Contracting Party to identify and protect the traditional knowledge systems. This appears to me is the recognition of the intellectual property rights over the existing knowledge system which is different from the protection of new knowledge through intellectual property rights. It is well known that the western notion of intellectual property rights through Patent, Copyright, etc., covers only "new" knowledge and what is already existing is not and could be protected as intellectual property. The above provisions in the convention is a clear understanding that the contracting parties have the right to recognise and protect the existing traditional knowledge systems. This is beneficial to the gene rich South inasmuch as it enables the State to protect the rights of the people also enables the State to empower the holders of the traditional knowledge system with the diversity-related intellectual property rights to bargain with the exploitation of their knowledge. Unless the State through

legislation recognise and protect these traditional knowledge systems, the exploitors will consider this as common property and by alterations they will convert this into private property without any benefit being given to the holders of the traditional knowledge systems. The holders of traditional knowledge will also have no right to prevent its exploitation or ask for the benefit deriving out of it in the absence of legal rights.

The power of Contracting Parties can also be seen from the provisions dealing with access to genetic resources. "The significant outcome of this Convention is the recognition of the sovereign right of States over their natural resources including genetic materials. It is also quite pertinent to note that the right of the State to provide access to genetic resources rest with the National Government and is subject to national legislation. While exercising the power under this Article, the State must recognise the ownership right of the people over the bio-diversity which is the product of the use of traditional knowledge systems. This is significant because the access to genetic resources shall be based on prior informed consent of the provider of such resource 12 on mutually agreed terms[13] and the parties have to recognise the trade-related intellectual property rights on the new products and technologies.[14] Thus it is clear that if the Contracting Parties who are in possession of genetic resources are not careful in protecting the interest of the holders of these resources, there is every possibility of the technology rich Nations exploiting these resources without returns. The consequence is the obligation to recognise the intellectual property rights in the newly developed products developed out of the genetic materials. The government can also include safeguard regarding the ways through which one could find out whether the access to bio-diversity was based on "prior informed consent". A significant role can be played by the government in this regard by incorporating appropriate terms and conditions into the agreement on transfer of genetic materials. The obligation on the part of producers of the new product based on genetic materials to disclose the detailed source of the genetic material at the time they seek protection for the new product can be an effective mechanism to find out the grant of prior informed

consent.

It is in this context one has to look into the provision in the Convention dealing with the issue of protecting intellectual property rights of the technology holders. One of the objectives of this Convention is to provide access to and transfer of technology and information to those who are not having it. It is needless to say that it is in the developed countries where the big multi-national and transnational corporations are located who have the control over technology including bio-technology. While the provisions emphasise the need for exchange of technology there are clear mandates as to the protection of trade-related intellectual property rights.[15] Though it was agreed to provide technology including bio-technology to the developing countries under fair and most favourable terms, the Convention mandates that the terms and conditions must have a provision to provide adequate and effective protection of trade-related intellectual property rights including patent rights on the technology. This protection must be afforded through legislative and administrative measures by the developing countries in accordance with international law.[16] The protection and access must also to be extended to the private sectors in the same manner.[17] Thus it is clear that these large private corporations will get not only effective and adequate intellectual property protection to their technology, but also access to the government. R & D genetic resources of the developing countries on a mutually agreed terms to achieve the objectives of the Convention.[18] It is these provisions which were included by the developed nations at the behesgt of large corporations who are involved in the business of bio-technology. The concern in this regard is conspicuous in as much as the freedom of the developing countries to legislate independent intellectual property protection is taken away by making it obligatory to follow international standards in this regard. It is in this context, the provisions relating to Trade Related intellectual Property Rights (TRIPs) in the GATT final Act in the recently concluded GATT negotiations are very important. These provisions make it obligatory on the part of Contracting Parties, to change their intellectual property, laws in accordance with the GATT Final Act provisions.

The TRIPs agreement in the GATT Final Act is a concerte and calculated effort of the holders of intellectual property t declare it as private rights. It is also an attempt to internationalis the intellectual property regime for the benefit of the owners o intellectual property who are global traders. The uniform norm they wanted to enforce on all the trading partners will enable ther to keep the week nations always technology dependent and sta the efforts of some of these nations to become self-reliant in man areas. The disgusting part of the agreement is the inclusion of item like seeds, plant varieties, bio-technology, micro-organisms, etc for private monopoly rights. These areas are important because o its impact on the food resources and health care system of million of undernourished people of the world.

It is mandatory on the part of Contracting Parties to GATT t provide patent protection to any inventions, whether product o process, in all fields of technology. This is available only t inventions which are new, involve an inventive steop, and are capable of industrial application.[19] It is also clear that patents are available and rights enjoyable without discrimination as to the place of invention the field of technology and whether products are imported or locally produced. The impact of this provision i far-reaching. It takes away the right of sovereign States to decide the patentable subject matter within their territory according to their social, economic and industrial needs. It also takes away the rights of the sovereign state of discriminate the inventions on the ground that it is not locally produced for the benefit of the country. It also denies the right of the sovereign State to have different standards on novelty and utility depending upon their industrial growth. These provisions are very important especially in the field of new technologies like bio-technology.

According to the provisions of the TRIPs agreement certain products of genetic material is completely exempted from the protection of intellectual property rights while some other products can be protected through a sui generis system. But the Parties are bound to give patent protection to certain other products. 20 Thus according to Art. 27(b) Parties must give patent to "Micro-organisms" and "non-biological and micro- biological

process" for the production of plants and animals. Similarly Parties are bound to give patent or effective sui generis protection or any combination thereof for plant varieties. What is kept out of protection according to this provision is only "animals' and biological processes for the production of plants and animals". Thus it is clear that only very limited products and processes produced from genetic materials are kept outside the domain of the one of other form of intellectual property protection. It must also be remembered that this is a temporary arrangement. The section makes it clear that this provision shall be reviewed four years after the entry into force of the agreement to constitute the WTO. Thus it may be possible that by the turn of the century, this sub-clause will be removed and every new product produced from the genetic materials will be subjected to patent protection. The history of protection of products from genetic material is indicative of this change.[21]

In this context, it is indeed necessary to look at the other provisions of the TRIPs agreement relating to patent protection. Thus for products like micro-organisms the patent owner has exclusive monopoly[22] for making, using, offeringfor sale, selling or importing it for 20 years.[23] In case of processes the patent owner has the exclusive right not only to use the process but also the right to prevent others from using, offering for sale, selling or importing for these purposes at least the product obtained directly by that process[24] for 20 years. It is also significant to note that the burden of proof in case of violation of process patent is on the violator.[25] The owner of process patent has only to show that he has made reasonable efforts to determine the process used by violator. This provision is applicable not only when the violator produces the same product for which there is a process patent but also to new products and identical products. It is to be noted that the extension of the reversal of burden of proof to new and identical products have significant impact especially in the area of research in genetic materials. Another significant provision in the TRIPs agreement is regarding the use of the patent without the authorisation of the owner.[26] This seems to be very limited and restricted. The impact of these provisions will be on the parties who are not

technologically advanced. It may not be possible for these parties immediately to take up research and development to compete with those who are advanced. To safeguard the interest of the developing and least developed countries' provisions are included in the TRIPs agreement to delay the application of the above provisions. Thus as far as India is concerned by virtue of Art. 65(2) and (4) [27]. We have ten years time in the field of bio-technology to implement these provisions. But it is disappointing to note that the government is not utilising this benefit. It is noticed that government is in a hurry to legislate a sui genesis system to protect plant varieties. It appears that this is limited to plants and seeds connected to farming. It gives an impression that they are going to give patent protection for other varieties of plants used for medicine and chemicals.

It is appears that the attempt is dangerous and will destroy the rights of traditional people on their genetic materials especially those used for medicine, chemicals and other purposes.

In this context it is significant to note that Art. 70(8) of the TRIPs agreement even though we have ten years time to give product patents to pharmaceutical drugs and agricultural chemicals as per Art. 65 of the TRIPs agreement. mandates to accept patent application from the date of entry. Though we have no obligation to give patent protections immediately, when we change our law and decide to give protection, we have to apply the provision of TRIPs retrospectively. We are also bound to give 5 years market access to these new products subject to market approval, as soon as any member nation grants patent and market approval to these new products. The question before us is the status of bio-drugs and bio-chemicals. Are they going to get patents? It appears that any attempt of the Government to protect the trade-related intellectual property rights under the GATT Final Act before protecting the traditional rights of the people of India under the Convention of Biological Diversity is against the interest of the traditional and indigenous people of India, and will be a violation of the fundamental principle in Article 39(b) of the Constitution.

Notes:

1. The GATT Final Act and the Convention on Biological Diversity.
2. See generally, Chakravarthi Raghavan, Recoinisation GATT, the Uruguaty Round and the Third World, Third Deepak Nayyar's "Dunkel Text: A Framework for Assessment" in Uruguay Round and Dunkel Proposals: An Overview, National Working Group on Patent Laws, New Delhi 1992 P.9: S.P Shukla, "The Emerging International Trading Order: A Story of the Uruguay Round", The Third World Economics, 1993 June P.1.
3. See Dr. Darrell Posey, "Intellectual Property Rights - An Indigenous Affair", Anthropology Today, August 1990. For an abridged version see The New Road, The bulletin of the WWF Network on conservation and Religion, Switzerland, Issue No.18, March-April 1991, P.8.
4. For a brief analysis see Philip Elmer Dewitt, "Rich v. Poor", Times, June 1, 1992 P.42; Ashish Kothari, "Politics of Bio-diversity Convention", EPW, April 11-18 1992, P.749.
5. See Arts 16(2), (3) and (5).
6. Preamble reads: "Recognising the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity conservation.
7. "Recognising also the vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women at the levels of policy-making and implementation for biological diversity conservation".
8. Art. 1 reads: "The objectives of this convention, to be pursued in accordance with its relavant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits

arising out of the utilisation of generatic resources, including the appropriate access to generatic resources and the appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies and the appropriatge funding.

9. Art. 8(j) reads: "Subject to to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and substainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovation and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices".

10. Art. 19(c) reads: "Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements".

11. Art. 15 reads: "Recognising the sovereign right of States over their natural resources, the authority to determine access to genetic reources restgs with the national governments and is subject to national legislation".

12. Art. 15(5) reads: "Access to genetic resources shall be subject to prior informed consent of the contracting party providing such resources, unless otherwise Catermined by the party".

13. Art. 15(4) reads: "Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article".

14. See Art. 15(7)

15. Art. 16(2) reads: "Access to and transfer of technology referred to in paragraph 1 to developing countries shall be provided and or facilitated under fair and most favourable terms, including concessional and preferential terms where mutually agreed, and where necessary in accordance with the financial mechanism established by Art. 20 and 21. In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided

on terms which recognise and are consistent with the adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraphs 3, 4 and 5.

6. Art. 16(3) reads: "Each contracting party shall take legislative, administrative or policy measures, as appropriate, with the aim that contracting parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary though the provision of Articles 20 and 21 and in accordance with international law and consistent with paragraph 4 and 5.

17. Art. 16(4) reads: "Each contracting party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access to joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries and in this regard shall abide by the obligations included in paragraphs 1,2 and 3 above.

18. Art. 16(5) reads: "The contracting parties, recognising that patent and other intellectual property rights may have an influence on the implementation of this Convention shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives".

19. Art. 27(1)(2) of the GATT Final Act read: "Subject to the provisions of paragraphs 2 and 3 below, patents shall be available for any inventions, whether products or precesses, in all fields of technology, provided they are new involve an inventive step and are capable of industrial application. Subject to paragraph 4 of Article 65, paragraph 8 of Article 70 and paragraph 3 of this Articles, patents shall be available and patent right enjoyable without discrimination as to the place of invention, the field of technology and whether

proudcuts are imported or locally produced.

(2) Member may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect order public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by domestic law".

20. Art. 27(3) reads: "Members may also exclude from patentability: (a) diagnostic, therapeutic and surgical methods for the treatment of human or animals; (b) plants and animals other than non-biological and micro-biological processes. However, members shall provide for the protection of plant varieties either by patents or by an effective sui qenesis system or by any combination thereof. The provisions of this sub- paragraph shall be reviewed four years after the entry into force of the Agreement Establishing the MTO.

21. See carry Fowler et.al, "The Laws of Life: Another development and the New Biotechnologies", Development 1988 Pp. 237-253.

22. See Art. 28(a)

23. See Art. 33.

24. See Art. 28(b)

25. See Art. 34.

26. Art. 31.

27. Art. 65(2) & (4) read: (2) - "Any developing country Member is entitled to delay for a further period of four years from the date of application, as defined in paragraph 1 above, of the provisions of this Agreement other than Arts. 3,4 & 5 of part I... (4) To the exten that a developing country member is obliged by this Agreement to extend product patent protection to areas of technology not so protectable in its territory on the general date of application of this Agreement for that member, as defined in paragraph 2 above, it may delay the application of the provisions on product patents of Section 5 of Part II of this Agreement to such areas of technology for an additional period of five years."

CONVENTION ON BIOLOGICAL DIVERSITY:

PROGRESS ON MAJOR ISSUES AT THE SECOND CONFERENCE OF PARTIES, AND RECOMMENDATIONS FOR FOLLOW-UP ACTION

Ashish Kothari*

Introduction

The Second Conference of the Parties (COP) to the Convention of Biological Diversity met during November 6-17, at Jakarta, Indonesia. This marked the start of the implementation phase of the Convention, since most of the administrative matters had been taken care of at the first COP last year. Governments of most of the world's countries moved through a heavy agenda, debating subjects which ranged from the ecological to the political, and trying to achieve consensus on issues some of which the world has rarely agreed on. Observing and lobbying them were nearly 150 NGOs from various parts of the world, and several independent scientists, social activists, and academics.

Given below is are notes on what transpired at COP2. This paper presumes that the reader is somewhat familiar with the provisions of the Convention on Biological Diversity (hereafter referred to as CBD); if this is not the case, readers may request a copy of a previous note by the author, explaining the major provisions of the CBD and the progress made before COP2.

Also given below are some ideas of the kind of follow-up that the Indian Government should take, in relation to the decisions reached at COP2.

For the convenience of readers, the abbreviations used here are listed below:

CBD: Convention on Biological Diversity

CHM: Clearing House Mechanism (set up under the Convention)

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CSD: Commission on Sustainable Development

COP: Conference of the Parties (official decision-making organ consisting of all contracting countries)

COP 2: The Second Conference of the Parties (Jakarta, Indonesia, November 1995)

COP 3: The Third Conference of the Parties (to be held in Argentina in November 1996)

GATT: General Agreement on Trade and Tariffs

GEF: Global Environment Facility

IPF: Intergovernmental Panel on Forests

IPR: Intellectual Property Rights

LMOs: Living Modified Organisms

NGO: Non-governmental organisation

SBSTTA: Subsidiary Body on Scientific, Technical, and Technological Advice (set up under the Convention)

TRIPs: Trade Related Intellectual Property Rights

UNEP: United Nations Environment Programme

UNOP: United Nations Development Programme

COP2 Decisions on Major Agenda Items, and Recommendations for Follow-up Action

1. General Measures for Conservation and Sustainable Use of Biodiversity, and for Protection of Threatened Species and Ecosystems

Summary: COP2 recognises the need to identify driving forces of biodiversity loss; urges governmetns to identify biodiversity components particularly under threat, and measures to protect them; fails to specifically ask for community and NGO participation in conservation measures.

Noting that all contracting countries are committed to taking measures for conservation and sustainable use of biodiversity, COP2 finally admitted to the need to identify the driving forces behind biodiversity loss. For years, NGOs have been pressurising countries to recognise that the CBD's objectives can only be met if underlying forces affecting biodiversity are addressed; these

include inappropriate development paths, insecure land and property tenure systems, trade inequalities, wasteful consumerism, destructive aid policies and programmes, and so on.

Unfortunately, the only mechanism suggested by COP2 to deal with this critical issue, is national strategies and reporting, which every country has to do under the CBD (see below, point 9). In the absence of any specific recommendations to make the process of preparing such national strategies and reports as consultative as possible, it is likely that consideration of the above will not touch the findamental forces driving biodiversity loss. The role of NGOs and independent experts in pushing for fundamental studies and action, is therefore critical here.

Follow up : India needs to do a thorough analysis of the various changes which will be neeeded in its planning process, to actually achieve conservation and sustainable use. Even if such changes are difficult and long-term, it is worth stating them up front, and influencing the international processes relating to destruction and conservation of biodiversity.

India also needs much more precise identification of the components of biodiversity under various degrees and kinds of threat; it has a substantial traditional and modern scientific base to build on, but much remains to be done.

India's Minister for Environment and Forests, Shri Rajesh Pilot, in his speech at Jakarta, correctly referred to excessive consumption patterns as a factor in biodiversity loss. He now needs to follow up by critically analysing the current boom in consumerism in India, encourated by his government, in terms if its impact on biodiversity and on local communities,

2. Access to Genetic Resources

Summary : Compilation of national measures called for; and commitment from industrial countries to take measures to check illegal access; human genetic resources not to be considered under CBD; no resolution on ownership of ex-situ collections; key terms still to be defined.

COP2 was informed by the CBD Secretariat that the

Philippines had already put into place a regulatory regime governing access to its genetic resources, requiring collectors and exporters of such resources to seek prior permission from the government. Several other countries also reported that they were developing similar regulations. However, despite a clear mandate from the CBD, the COP did not send out an unambiguous signal that all countries should adapt such a regime; indeed, there appeared to be resistance from industrial countries to ensuring that they have such a regime for imports of genetic resources into their boundaries. This could threaten the effectiveness of regulations in provider countries.

In addition, COP2 did not make any effort to clarify the meaning of phrases which are used in the CBD's Article 15 on Access to Genetic Resources, such as "Prior informed consent", "mutual agreement", and "equitable benefit-sharing:. This is clearly a subject for further work, and the Secretariat has been asked to compile "national interpretations of key terms used in" Article 15.

In a decision with potentially far-reaching significance, COP2 decided that the CBD was not the right forum to discuss matters relating to human genetic material. Several NGOs have repeatedly highlighted the unethical trade in and patenting of such material, and have asked for an ban on such practices. Technically, human genetic material falls within the purview of the CBD, but perhaps rightly, delegates pointed out that the CBD's provisions were not developed to deal with it, and that the issues involved were complicated enough to be dealt with under another forum.

Follow-up: India needs to urgently put into place a regulatory regime for international transfer of genetic resources. A draft notification for this has been in existence for several months, but has not been issued by the Government of India. This should be done without delay.

In addition, India needs to develop legislation governing access to the biological resources and related knowledge of local (especially tribal) communities, so as to ensure their rights and a share for them of the benefits arising from the commercial use of such resources and knowledge. This aspect was highlighted by the Union Minister for Environment and Forests, Shri Rajesh Pilot, in

his address to the COP at Jakarta; he should not follow up with specific action here.

Finally, India should suggest to the international community possible definitions for terms used in Article 15.

3. Intellectual Property Rights

Summary: Studies sought of relationship between CBO and TRIPs (GATT), and of impacts of IPRs on biodiversity; Indian attempt to make IPR regimes more accountable stillborn.

In what could potentially be a major step towards putting a brake on the runaway world of patents and other intellectual property rights (IPRs), COP2 has sought three important follow-up actions:

(i) a study of the relationship between the CBD and the Trade Related Intellectual Property Rights (TRIPs) Agreement of the General Agreement on Trade and Tariffs (GATT);

(ii) an analysis of the impacts of IPRs on the conservation and sustainable use of biodiversity, and on the equitable sharing of benefits arising from such use; this is to focus especially on the impacts of IPRs on the knowledge and practices of local communities; and

(iii) consultations with the private sector as also local communities regarding their related needs and concerns.

The US and some other industrial countries, fearing a backlash from their powerful industrial sector, tried their utmost to ensure this decision was not taken at COP2, but had to give in to some persuasive arguments from Third World Countries, including India. They were, however, able to include language which implies that the relationship between TRIPs and the CBD is probably more "synergistic" than negative, an interpretation directly at variance with that given by several Third World countries and most NGOs. It is now up to these countries and NGOs to ensure that the Secretariat does a comprehensive analysis for considering by the next meeting of the COP.

The Indian Minister for Environment and Forests, Shri Rajesh Pilot, was forthright in stating that existing IPR regimes do not protect the rights of local communities. In addition, the Indian delegation made bold to suggest concrete changes in existing IPR regimes, by which applicants would be required to specify the source of their material, and to prove that they had met the CBD provisions of prior informed consent from countries and consent from local communities. Unfortunately, their only support came from some NGOs (including a couple who had originally given them them the ideal); none of the other countries openly supported them, so the proposal was quietly buried. But it is a suggestion worth pursuing at various forums.

Follow up: India needs to urgently initiate studies of the actual and potential impacts of IPRs on biodiversity conservation, sustainable use, and equitable benefit sharing. In particular, their impacts on local communities (including farmers), and on the indigenous seed and pharmaceutical industry, are subjects requiring analysis. Such analysis must then be forwarded to the CBD Secretariat for inclusion in its report.

In addition, India must ensure that its own development of its patent law, currently under amendment under pressure from GATT, does not violate the provisions of the CBD. Specifically, it must exclude all life forms from patentability.

Thirdly, India should develop sui generis systems of intellectual rights which protect the interests of local communities and of the nation as a whole (following up from the statement of the Environment Minister), and which can counter the increasing monopolisation of resources and knowledge by the private sector. These models should then be forwarded to international forums, including the CBD Secretariat, for consideration and adoption.

Finally, India should pursue its attempts to make the exiswting international IPR regimes more accountable, by insisting on specifications regarding source of original material, prior informed consent, and consent of local communities.

4. Agricultural Biodiversity

Summary: COP urges FAO to bring agricultural biodiversity and the International Undertaking on Plant Genetic Resources in line with CBD; urgent resolution sought of ownership of international gene banks and of farmers rights issues.

Nothing that the U.N. Food and Agricultural Organisation (FAO) is holding a major technical conference on agricultural genetic resources in 1996, COP2 has sent a detailed message to the conference stating that the CBD be treated as the "overarching framework" for all agreements relating to biological diversity. It has urged FAO to revise the International Undertaking on Plant Genetic Reources, an agreement for the purposes of ensuring the widerspread and equitable accessibility of such resources, so that it comes into line with the CBD. This would mean that it accept the principle of national sovereignty over genetic resources, rather than hold such resources as being the common heritage of humanity.

Directly flowing from this is the issue of the ownership of, and access to, the massive gene collections (about half a million accessions) currently housed in the international centres of the Consulative Group on International Agricultural Research. These collections provide the material for a substantial amount of the agricultural advancement in industrial and agricultural countries, yet the profits made from them do not accrue to the countries and communities which originally provided the material. While the CBD does not deal directly with such collections, countries have in a separate resolution sought clarification the issue of their ownership. COP2 has urged the FAO to urgently resolve this matter (having opted not to deal with it itself under the topic of Access; see above), as also the pending issue of defining and implementing farmers rights in relation to plant genetic resources.

Follow-up: India is very far from taking action to conserve its own agricultural biodiversity; indeed, its move towards further commericalising and industrialising agriculture is only causing further erosion of this diversity. A drastic review of policy is needed, as are urgent programmes to encourage on-farm use of crop and livestock diversity in

conjunction with attempts to increase productivity.

At an international level, India should keep up its pressure to bring gene banks under inter-governmental control, and should seek ownership over the material which has gone from here so that appropriate returns can be obtained from its use, and so that others can be stopped from taking IPRs over material derived from it.

In a recent move, the Ministry of Agriculture has sought to provide a wide definition of farmers rights, in relation to its proposed Plant Varieties Protection Act. This definition needs to be examined, and all the safeguards and rights that farmers should enjoy in order to fulfill the provisions of the CBD (including Article 8j on local community rights), should be incorporated. India can then push for the acceptance of such a definition as a part of the CBD.

5. Forests and Biodiversity

Summary: CBD is still not the supreme body deciding forest related issues; COP to provide advice to Intergovernmental Panel on Foressts; stress on local community rights and no factors affecting biodiversity in forests; NGO inputs sought.

The rather strange situation of forests considered outside of the CBD, by a separate forum altogether, continues. This separation was institutionalised last year when the Commission on Sustainable Development (CSD), the inter-governmental forum which is guiding the implementation of Agenda 21, set up an Intergovernmental Panel on Forests (IPF). The IPF is now seen to be the supreme international body deciding the fate of forests.

Unfortunately, due to this separation of functions, COP2 was unable to begin any concrete process of decision-making regarding forests (unlike in the case of marine/coastal biodiversity, see below point 6). a suggestion from some countries and many NGOs to have either an expert panel or an open-ended working group on forests, was rejected. India was in the strange situation of wanting to stress the critical importance of dealing with forests under the CBD, while being aware that it was co-chair of the IPF.

In an effort to gain some lost ground, COP2 has sent a

message to the IPF stressing the need to consider biodiversity values and local community interests in all plans relating to forests. It has asked the CBD Secretariat to provide the IPF with advice and information on these aspects. It has also stressed an open, participatory approach to the management of forests, particularly involving local communities. COP3 may send further advice to the IPF, regarding the underlying causes of biodiversity loss in forests, and measures for protecting the interests of forest dwellers. It is apparent that COP2 has been heavily influenced by consistent NGO lobbying on these issues'

Follow-up: India needs to review its internal legislation and programmes regarding forests, especially in terms of the conservation of biodiversity and the protection of local community rights. Current legislation on forests and wildlife are inqdequate to deal with these apects; in the case of local communities, the legislation is highly restrictive. Secondly, a comprehensive analysis of the underlying forces of forest loss and degradation is urgently needed, followed by actions to counter these forces. Any pronouncements on forest conservation in international forums such as the CBD and the IPF, would be meaningless in the absence of such steps.

Following on from internal analysis, India could send appropriate guidance to the CBD Secretariat with regard to matters on which the Secretariat is to report to the IPF, in particular forest biodiversity loss and the protection of local community interests.

6. Marine and Coastal Biodiversity

Summary: Major focus on loss of marine biodiversity at COP2; expert panel to examine issues in greater detail; community practices to be integrated into management.

In terms of substantive debate and concrete recommendations, the subject of marine and coastal biodiversity was clearly up front at COP2. This was partly because of several preparatory processes, including detailed recommendations from the CBD's scientific advisory body (SBSTTA), and from expert meetings in the last one year.

COP2 has sought a study of the relationship between the Un Law of the Sea, especially with regard to the resources found in deep seas beyond national jurisdiction. It has also expressed concern regarding overfishing and aquaculture, areas which had been identified by SBSTTA as requiring urgent attention. An expert panel has been established, to report to the SBSTTA, for a period of three years, with the mandate to recommend concrete measures to protect marine and coastal biodiversity. The panel has instructions to especially consider the knowledge and practices of local fisherfolk communities, and to spell out possible approaches for integrated coastal and marine management.

Follow up: India needs to make sure it can send comprehensive inputs into the expert panel, by both doing its own internal assessments of coastal and marine biodiversity, and by ensuring that it is well-represented on the panel.

A precise picture of the status of India's marine and coastal biodiversity is not yet available; unlike forests, we do not have a regular Marine/Coastal Survey of India doing regular monitoring. Perhaps this needs to be set up. In any case, a detailed report on this is urgently needed.

As in the case of forests, there is a need for a thorough review of policies, legislation, and programmes relating to the marine and coastal areas, which are under severe threat by various forces including inappropriate development. Current debates on the introduction of deep sea trawling and massive aquaculture operations, and on the rights and interests of local fisherfolk, are a pointer to the issues involved. India must be able to raise these issues as a central part of the deliberations of the CBD's expert panel.

7. Safe Handling of Biotechnology

Summary: Biosafety protocol to be developed by 1988; Third World should be geared to handle tough negotiations; NGO help should be sought.

After considerable debate over several days, during which the USA and some other industrial countries tried to block

progress, COP2 has finally given the green signal to a legally binding protocol on the safe transfer, handling, and use of genetically engineered organisms (called "living modified organisms" or LMOs). This protocol will focus specifically on "transboundary movement, of any living modified organism resulting from modern biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity:. An open-ended working group, to which any of the CBD's party countries can send representatives, has been established to develop this protocol over the next three years.

This step is an important voctory for Third World countries which have been seeking such an agreement for several years, only to be frustrated by the stubbornness of industrial countries who see in it a threat to their biotechnology industry. At places the wording of the COP2 decision on this is weak, and is at pains to ensure that a protocol does not have "unnecessary negative impacts on biotechnology research and development" and does not "hinder unduly access to and transfer of technology", it has nevertheless accepted the critical principle of a "precautionary approach", which would help to build safeguards even where precise negative impacts are not known/understood.

A decision to develop a protocol is, of course, one thing; actually getting it done is quite another. It is expected that some industrial countries and the powerful biotechnology industry will try to delay the development of the protocol, or at least ensure that it is as weak as possible; at the same time, Third World countries may be seen as not having the capacity to push for a technically sound protocol and subsequent measures. Overcoming these obstacles is likely to provide the biggest challenge to the CBD's working group over the next few ywars. Governmental delegations will do well to seek the support of NGOs who have considerable expertise and experience in the area; many of these NGOs have keenly followed the COP discussions, and would be willing to help in pushing ahead the protocol as quickly as possible.

Follow-up: India should be pro-active in developing a framework for the biosafety protocol, for which its existing notification on genetically modified organisms can be used

as one basis. It also needs to urgently identify the kinds and levels of transfers of LMOs that may already be taking place from other countries to India, and to put a check on these till the protocol is in place.

8. SBSTTA and Clearing House Mechanism

Summary: COP2 accepts the broad recommendations of the expert advisory body SBSTTA, amidst concerns regarding composition of the body; global biodiversity status update to be periodically produced; Clearing House Mechanism to be set up in a pilot phase.

The first report of the CBD's major expert organ, the Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA), was considered by COP2. The major recommendations regarding the modus operandi of the SBSTTA were endorsed; these include the possibility of setting up small expert panels on specific issues, having regional consultations, building up a roster of experts who can be called upon for advice, and involving local communities and NGOs.

However, NGOs and some government delegates expressed concern that the SBSTTA, had inadequate social science expertise, almost no experience from the cultural fields, and inadequate representation of indigenous peoples' and local community views. Unfortunately, COP2 did not give any directions to SBSTTA on these concerns.

The SBSTTA's recommendation that the COP periodically consider an update on the status of the world's biodiversity, called the Global Biodiversity Outlook, was accepted. The first Outlook is to be produced in 1997.

COP2 also decided to establish a pilot phase of the second subsidiary organ of the CBD, the Clearing House Mechanism (CHM). The CHM is primarily to handle the exchange of information which could facilitate national actions towards conservation and sustainable use, as also help in technology transfer and training programmes. The CBD Secretariat has been asked to build up an active network of "partners", including NGOs, who could help in implementing the CBD.

Follow-up: India already has one scientist designated on the SBSTTA, Prof. Madhav Gadgil of the Indian Institute of Science. Subsequent to the first meeting of the SBSTTA, he has recommended the designation of some focal point organisations/individuals for follo-up action related to the various issues of the CBD (including many of the points raised here). This suggestion should be acted on soon.

In addition, India needs to ensure the participation of a wide cross-section of people in the process of sending advice to the SBSTTA. Prof. Gadgil has promised to stay in active touch with both government and NGOs in the discharge of his functions. This is already happening informally, but it could be formalised by the Ministry of Environment and forests facilitating a network of organisations/individuals interested in various issues (see point 11 nbelow). The members of this network could also form a part of the global network of "partenrs" which the CBD Secretariat is supposed to liaise with.

Finally, India should forward to the SBSTTA and the CBD Secretariat a list of experienced persons who could forgure in the CBD's roster of experts; ideally, this could consist of persons who have knowledge of various aspects of the CBD: forest and other land ecosystems, aquatic (marine and freshwater) ecosystems, species, local community systems, access and IPR issues, technology transfer, etc.

9. Financial Mechanism/Measures

Summary: GEF retained as interim financial mechanism; draft MOU not cleared; additional funding sources to be identified; taxation should be considered.

Once again, the COP decided to retain the Global Environment Facility (GEF) of the UNDP/UNEP/World Bank as the interim financial mechanism for the purposes of financing activities under the CBD. For years, Third World countries have opposed the designation of the GEF as the permanent mechanism, pointing out that it is still not totally democratic in its decision-making process (donor countries of the north have a

greater say), and that it does not adequately meet the requirements of the CBD. Most NGOs have also opposed it, both for the above reasons as also because the World Bank continues to dominate the found. However, with donor countries solidly blocking any attempt to create an independent fund for the CBD, Third World countries appear to have no option but to the permanent mechanism; in addition, they have refused to clear a draft Memorandum of Understanding between the Conference of Parties and the GEF Council, sending it back for further revisions.

Another option for achieving some independence from the GEF is to seek additional sources of funds. A note by the CBD Secretariat on this was considered by COP2, and the Secretariat has been asked to develop on it further.

Unfortunately, additional sources so far identified by the governments and the Secretariat are existing bilateral and multilateral agencies, and deals like the debt-for-nature-swaps. Some innovative suggestions from NGOs continue to be ignored; these include the idea of an international tax on the pharmaceutical, seed, and other biodiversity based industry, the proceeds of which could go into a fund for use by the CBD. The multinational industry (and within nations, local industry) makes enormous profits from using biological resources without providing adequate returns back to the countries and communities from which their source material comes; there is no reason why it should not be taxed to ensure some returns.

Follow-up: India should actively suggest additional sources of funding, including international and national taxation, and urge the Secretariat to include these in its report to the next Conference of Parties.

10. National Reporting

Summary: Countries to submit reports on implementation of CBD by 1997; no stress on making the reporting procedure consultative in each country and internationally.

Starting 1997, the COPs will hear each country reporting on how it has implemented the provisions of the CBD, with special

focus on Article 6 of the CBD, dealing with general measures for conservation and sustainable use (see point 1 above). This process is critical, both from the point of view of establishing the seriousness of each country towards their commitments, and from the point of view of allocating funds to countries. It is also on of the most important tools by which the public in each country could get involved, if the government so desires. Unfortunately, though NGOs lobbied for this at Jakarta, COP2 chose not to stress the role of local communities and NGOs in the preparation and finalisation of the national reports. It also ignored an preparation and finalisation of the national reports. It also ignored an NGO suggestion that the COP and the Secretariat treat documents submitted by independent agencies/individuals with the same importance as they treat official country documents.

Follow-up: India has in the past initiate the preparation of a status report on biodiversity, a national action plan, and a comprehensive legislation... but all three are stuck for various reasons within government. It needs to quickly finalise and operationalise each of these. These will help it to prepare the report it has to submit in 1997.

While each of the above three actions has involved some NGOs and independent scientists, there has to be a much wider consultative process (especially with local communities) in each. The national reporting requirement gives the country another chance to involve as much of the citizens as possible; if started now with a systematic format, the next two years could see widerspread consultation resulting in a report which is truly participatory.

11. Involvement of Local Communities and NGOs

Summary: COP2 mixed experience for non-governmental involvement; all decisions favour such involvement in future.

The CBD process has become established as one with a great amount of NGO input (and to a lesser degree, direct input of local communities). At COP2, upwards of 140 NGOs were registered with over 350 participants; they wer constantly lobbying with government delegates, producing reading material including a

couple of regular newsletters, holding informal workshops and discussions, helping delegates in framing statements, protesting unwelcome decisions and viewpoints, and making statements at the formal sessions. While not all governments welcomed such active involvement, there was general appreciation from delegates and the CBD Secretariat that the process would be greatly inpoverished in the absence of NGOs. However, the experience with how active NGO participation could be at the negotiation session, was mixed; in the case of official working groups like that on forests, NGOs had a hand even in helping to draft the final statement, while for that on biosafety, NGOs were excluded from the drafting group rfoom altogether.

The most positive development was that two formal meetings were organised between NGOs and the CBD system, one with the Secretariat, and the other with the Conference Bureau. At both, an official commitment to encourage NGO participation was given. NGOs have subsequently given a memorandum to the Secretariat regarding the formalisation of relations, and the kinds of facilities and processes that NGOs would require in future. A response from the Secretariat is awaited.

Representatives of indigenous and local communities had a separate meeting with the Secretariat, and were also quite vocal in expressing their concerns regarding their participation in the CBD process. They have been assured of much greater access to the process; interestingly, the theme of local community rights and participation came up repeatedly as a central focus in many of COP2's discussions, and one ministerial delagate even suggested that the ministerial part of the next COP be curtailed to allow indigenous people to address the delegates.

Follow-up: While initially, the processes within India relating to the CBD were restricted to the government, they have increasingly opened out. However, widespread consultation with local communities and NGOs is still far from being acheived. In matters like access and IPRs, forest and marine biodiversity conservation, and of course benefit sharing with local communities, such consultation is critical.

A number of steps are recommended for this:

(i) Translation of the major CBD documents into local languages, and their widespread distribution.

(ii) Workshops on major issues on which India has to act/respond in the next one year, including the issues mentioned above. Focal point organisations or individuals could be assigned the responsibility of preparing background paper(s) for discussion; subsequently workshops at regional/state level should be organised; at the end of this process, final position papers could be prepared for submission to the CBD Secretariat, SBSTTA, and COP3.

(iii) Public hearings at various locations, especially in order to facilitate local community representation, on issues that directly concern such communities. This would include especially apsects of access to genetic resources, intellectual rights, and rights to common property resources like forests and aquatic ecosystems.

(iv) The creation of a loose network of organisations and individuals, sponsored by ther Ministry of Environment and forests, which can work on the major issues. This network could feed both SBSTTA and CHM, through official Indian delegates as also build linkages with the CBD process in general. The network shoudl be open to all; information exchange onit should be through both regular mail and electronic mail methods. A node could be established at the electronic mail methods. A node could be established at the Ministry or, preferably, at some other institutional base which has the capacity to take on the function of facilitating a network.

INTELLECTUAL PROPERTY RIGHTS IN THE CONTEXT OF CONVENTION ON BIOLOGICAL DIVERSITY

—Chhatrapati Singh*

A major difference between the pre-Stockholm and post-Rio declaration is that while the former based themselves on the rights of the individuals the latter openly recognise on base themselves on group rights. The Preamble of the Convention on Biological Diversity (CBD) begins with the recognition of the Sovereign Rights of 'States'(Para 4). Later it recognises local communities and the desirability to share the benefits of the use of resources with them (Para 12). Whether it be individual Human Rights or group rights, the problems that confront the dominant rights-based discourse remain similar. The issues that need to be resolved in the intellectual property rights regime, hence, cannot be any different.

What are the basis issues? First, the realisation of rights requires a socio-political economy in which those wishing to realise their rights can actually do so. If this were not so, after the Declaration of Human Rights the fate of the tribals in India or the vast majority of the rural poor would have been very different. Clearly those wanting to realise their rights need the power to achieve this or have to be empowered to 'level-play' the game. In the absence of such powers, it would help little to say that all States have sovereign rights or that the intellectual propertyn rights(IPRs) of local communities must be recognised. The prior question would be does the CBD or GATT address this question of even recognises it. If not, then how do we handle this question within CBD or GATT. This needs to be discussed.

The second basic assumption in international environmental law, is including CBD and GATT is that the natural resources are needed by human kind alone, the needs of the bio-diversity (the least empowered and voiceless, excluding human beings) are not being recognised. Is the biodiversity to be conserved for mankind

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alone? This is not a moral question, there is a deeper issue of scientific ecology involved here : can the biodiversity be at all conserved if it is protected for human alone? This issue has serious implications for those articles of the CBD which concern in-situ conservation (Article 8 specially).

The third assumption in international environmental law, which has direct implications for IPR is the Western Dogma that justice and equity can be administered through the 'rights' discourse only. All issues of dispensing justice, hence, whether it be to animals, foetus, children, revolve round their rights, whether or not they be empowered enough to realise such rights. Can there be any other legal regime (other than IPRs) within which the biodiversity can be protected or what is due to local communities realised and the benefits shared? In the prevalent analysis such legal directions are not being sought. Empirically, it is well known that the beneficiaries of those having rights are, by and large, the rich or the powerful.

Before we turn to discuss the implications of the above assumptions for CBD, specially in the context of IPRs let us briefly outline the legal regime provided in this Convention, including in relationship to the relevant provisions of GATT, namely TRIPs.

The CBD does not mandate IPRs. It assumes this would be necessary or desirable (Article 16). These are five identifiable types of IPRs: patents, plant breeders' rights, compyrights, trademarks and trade secrets. The difference between IPRs and other types of property rights is that IPRs are for non consumable or intangible process or products while the other for consumables. Of these various IPRs patents, plant breeders' rights and trademarks (labelling) are of immediate concern to CBD, although all these types of IPRs are dealt within TRIPS under GATT. The basic moral assumption for IPRs is that it will encourage inventions and protect the outcome of labour. The other basic assumption for implementation of IPRs is that the agent who will possess such rights is identifiable.

If we look at the Indian context and tradition, the assumptions are directly opposite. Precisely those non-consumables or intangible process or products, such as

knowledge about health, medicine, music, crafts, etc., are taken to be those for which the agent who has created the body of knowledge is not an individual and who do so do not require reward or equitable price for their trade or craft. Talking of indigenous knowledge, is this not knowledge itself? Why should this Indian view be totally discarded? There are and have been other legal notions, besides property rights which can safgaurd the interests of such people and ensure sharing of benefits with them. These need to be explored.

RAT RACE

Those who are after increasing wants they are involved in a kind of mad race. They unnecessarily think that by increasing their wants, they will enrich their essence and enhance their real knowledge. In the future, a day will come when they will have to ask the question "What have we done?"

One after another, civilizations have come and gone. But inspite of their so called self proclaimed achievements, I feel like asking again and again "Afterall, what is all this for?"

Wallace, contemporary of Darwin, said that inspite of various new inventions and discoveries in the last fifty years, the humankind has not achieved one inch of ethical growth. Tolstoy had also said the same thing; Buddha, Jesus Christ, Prophet Mohammed, and others have said the same thing.

– M. K. Gandhi

TRADITIONAL FORESTRY AND CONSERVATION OF BIODIVERSITY IN THE WESTERN GHATS OF SOUTH INDIA.

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A megadiversity of human communities and their traditions of interactions with nature, make the Indian subcontinent an interesting place for the study on traditional forestry. Over the last two millenia, waves of invaders marched through especially the plains and plateaus of India creating, presumably sweeping changes in culture and traditions of consideration. However the lost or weakend traditions of nature conservation elsewhere persist in some form in the mountains areas like the Himalayas and the Western Ghats. In the tribal state of Mizoram the sacred grove, from which all the harvests are banned, is termed as "safety forest" and the community controlled woodlot from which regulated harvests are made as the "supply forest", suggesting that such prescriptions might have been deliberately arrived at in the interest of resource conservation (Malhotra, 1990)

THE WESTERN GHATS SCENARIO

The Setting

The Western Ghats stretch for about 1600 km from the river Tapti (21 N)to the tip of south-west India (8 N). Due to various factors like monsoon mechanism, distance from the equator and physiography, there exist a diversity of rainfall, humidity and temperature regimes. The rainfall varies from 2000 mm to about 6000 mm per annum in most places except along the rain shadow areas facing the Deccan. In general the hills receive much more rains than the plains. The number of wet months in the year is decisive about the kind of vegetation along the Western Ghats and

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the west coast. The wet months decline from 8 - 9 at Thiruvananthapuram in the south to less than 5 at Ratnagiri in the north (Pascal, 1988). In general the higher altitudes have more number of wet months than the coast facing them. The eastern slopes of the Ghats have much lower precipitation and a more extended dry season than the western.

The sources

This study, dealing more with the Western Ghats of southwest India, is based on field work, travalogues, forest settlement reports, forest descriptions dating taking back to the early British period, forest working plans and folk history.

The primevial vegetation

In the region under reference, prior to the arrival of agriculture and pastoralism, evergreen forests would have covered the entire coastal lands and most of the hills where the rainfall exceeded 2000 mm. The splendid remains of the semi [illegible] to evergreen kan forests of Soral, Shimoga district, (rainfall about 1500 mm), show that the evergreen climax forest, thed even part of the rain-shadow region. Towering above the general range og hills are a number of peaks exceeding 1800m in height. Cold, wind-swept and with shallow soils some of these peaks and, some elevated plateaus are expected to have grassland as the natural climax. Anamudi (2695 m) is the loftiest of such peaks followed by Doddabetta (2637 m). The sheltered folds of the high rising hills have the evergreen shola forests. Deciduous forests would cover the rain-shadow region with annual rainfall less than 1500 mm. Despite human impact on the forests, spanning over several centuries, the Western Ghats are rated as one of the 18"Hot Spots" of plant endemism on the earth (Myers, 1980)

THE ENTRY OF AGRICULTURAL MAN

Major vegetational changes would begin in the Western Ghats west coast region with the arrival of agricultural man, probably around 3000 to 3500 years BP(Subash Chandran, 1993)

The need for shifting cultivation

Exposed soils of the humid tropical hilly places are notorious for erosion and loss of fertility on constant cultivation. Yields would decline drastically in two or three years and pest pressures increase. Slash and burn cultivation was one of the oldest forms of hill agriculture practised by the mankind to circumvent these problems. Tropical secondary forests are, at least partly, due to shifting cultivation. Biomass accumulates rapidly in secondary forests during the first 15 years or so. High rates of litter production are established relatively quickly. More organic matter is produced and transferred to the soil in younger secondary forests than is stored in the above ground vegetation (McGrath, 1987; Ramakrishnan, 1982).

Prevalence of shifting cultivation in the Western Ghats

References to hill cultivation (presumably shifting) of rice and millets like tinai by hillmen are found in the Sangam literary work Maalipadukadam of early Christian period. Buchanan, during his journey through Uttara Kannada in 1801, examined at Gokarna records which contained allusions on kumri tax dating back to the 1450's (Buchanan, 1870). All along the Western Ghats, especially below the elevation of 1000 m, there was widespread occurence of shifting cultivation. A number of tribes were engaged in this vocation. Mention may be made of Kanies, Valanmars, Arayans, Kochivalans, Palliyars, Uiladans, Uralis, Mannana, Muthuvans etc. of Travancore - Cochin, Irulars and Kurumbars in Nilgiris, Kudubi (Kumri) Marathas and Malai Kudigals in Dakshina Kannada and Kumri Maratha, Kunubi and Karivokkaligas in Uttara Kannada. Various tribals also cleared forests fir shifting cultivation in the entire stretch of Malabar, Coorg and other parts. Shifting cultivation persist to this day along the Maharashtra Ghats.

HILL CULTIVATORS AND BIODIVERSITY

Among the crops raised by hill cultivation may be mentioned rice (more in southern parts), and millets ragi, shamay, tinai, etc. Reg gram, cowpea, gingelly, castor, tapioca, yams, cucurbits,

brinjals, chillies, plantains etc were also cultivated. Tribes alike Kanies and Aryans who lived for several years at on eplace enriched their surroundings with fruit trees like mango and jack (Bourdillon, 1892).

The hill people hunted substantially. The game was abundant in the woods at least upto the close of the 19th century. Extensive grassy patches and the landscape heterogeneity in general, to a large extent created by the shifting cultivators, were responsible for the abundance of game. They also gathered jungle produce like pepper, cardamom, honey, wild fruits and seeds, mushrooms, resins of trees, various barks, fibres, medicinal plants etc. for their own use and barter for other basic commodities. Toddy was tapped from palms like *Caryota urens* and *Arenga* spp. to the Kumri Marathas of Uttara Kannada starch from pith of the umbrella palm, *Corypha umbraculifera* was an important food. The pith of Caryota urens was also used in famine times. The seeds of Cycas circinalis was a major item of food for the Malapandarams of Travancore. The hillmen also finished in the streams and rivers using various devices including plant poisons. Several of the tribal groups used locally available resources like reeds, rattan canes, bamboo and leaves of various palms for weaving baskets and mats for sale and for constructing their huts.

The abundance of game animals, including birds, in the woods is recorded in the accounts of travellers. For instance, Fryer in 1676, observed (Campbell, 1883) :

"At Karwar no beef was to be bought; but game was abundant, and to English factors went to the woods, sometimes for a week at a time. They lived on fish, waterfowl, peacocks, green pigeons, spotted deer, sambar, wild hogs and sometimes wild cows....."

Malaipadukadam, the Sangam classic is eloquent about the blessings of the mountains :

"The jungle men who live on high hill slopes
have honey, roots, crates filled with meat and pork
.....
And baskets full of other kinds of meat."
.....

"The mountain in portion of the king's domain
Is better than the land described
Now hear what kind of food thou'll receive,
The meat of iguana hunted by the bitch,
The rich flesh of the deer killed in its flight,
And meat of porcupines, the blood still fresh,
Thou will then drink much toddy well matured
With honey mixed and served in a bamboo pipe."

In the timelessness of the mountains the life of the tribals remained undisturbed almost upto the colonial period, barring certain sporadic events. Political turbulence in Maharashtra, during the Mughal period, made the Kumri Marathas to migrate into the hills of Canara and subsequently into the Mysore territory and even northern Malabar. The Portugese domination of Goa during the 16th century made many Kunbi peasants to move into the jungles of Uttara Kannada.

Ethics of shifting cultivators

It is notable that despite shifting cultivation large tracts of nearly primevial forests remained in the Western Ghats till the close of the 18th century. Most of the British officers were uncharitable towards this system of cultivation by the "vagrant" forest dwellers and its "devastating" effects. It is true many non-tribals too, often stealthily, got forest patches cleared for kumri by the tribals. Many a primary forest, no doubt, rich in diversity and endemism was cleared by the hill cultivator. It was a major form of subsistence at one time when the modern agricultural technology was not available.

The hill cultivators were comparatively a freedom loving lot. They escaped possible slavery of the plains by preferring the remoteness of the Western Ghat forests. It was inevitable that for survival in the hills they had to burn forests. But the forests were not scorched indiscriminately. Each tribe or clan of Travancore had a certain tract of country which was considered to belong to it, and no one dared to enroach on the land of another clan or another village .without permission. Thus in the Peermedu plateau of

Travancore the southern Mannans, Paliyars, Uralis and Muthuvans respected the boundaries of each other laid by tacit agreement (Bourdillon, 1892)."

Consequences of fire

In a heavily wooded tract fire was a major weapon to clear forests for agriculture and savannization. Fire affects the regeneration of forests through burning of seeds, seedlings and trees and indirectly through increasing surface temperature of soil, reducing organic matter, modifying soil texture and facilitating erosion (UNESCO, 1978). The burnt soil, compacted and exposed, would promote increased run-off and soil erosion, adversely affecting watershed. The endemic vegetation of the Western Ghats, particularly the evergreen forests, would decline in the fire affected areas and the succession on fallow lands would favour the more fire tolerant and mostly deciduous forest species. Such species are with greater ecological amplitude (Subash Chandran, 1993).

If fire strikes the same area at short intervals at savanna would result, dominated by grasses and isolated dwarf trees with thick bark, light seeds, high coppicing power and ability to propagate from the roots. If the fire occurs at longer intervals, depending on the duration of the interval and local climatic and physiographic conditions, a savanna woodland or deciduous forest rich in durable timbers and bamboo would result. The evergreen elements including the undergrowth of canes and other palms would return in the course of further vegetational succession until the next cycle of slash and burn, if at all, intervenes (Subash Chandran, 1993). The proneness to desertification would increase under repeated fires in kore northern latitudes. The coastal, laterite capped, and heavily denuded hills of Uttara Kannada stand testimony for such happening. Denudation of this kind is more pronounced along the coastal Maharashtra.

The things look greener southwards. So much so, along the slopes subjected to shifting cultivation in Travancore, even to this day, we can see dense growth of coarse grasses, clumps of bamboo and several deciduous tree species. Fire spreads through these woodlands during the dry months and the regeneration of trees

may be affected adversly. The tribals lead more settled lives these days eversince the severe curbs on shifting cultivation. Nevertheless these landscapes elements, with the early flush of tender grasses and bamboos, along with the dense clumps of reeds (*Ochlandra* spp.) and wild arrowroot, wild ginger and other herbage of the stream sides act as powerful attractants for herds of elephants and other wild-life. Where fire control is strictly enforced the tribals complain about the wild animals not getting adequate forage thereby raiding their crops.

FORESTS AND BIODIVERSITY CONSERVATION : THE TRADITIONAL WAY

Of late much light has been shed into the subject of biodiversity conservation by traditional societies. According to Gadgil, Berkes and Folke (1993) indigeneous peoples with a historical continuity of resource use practices often possess a broad knowledge bas of the complex ecological systems in their own localities and they do develop a stake in conserving, and in some cases, enhancing biodiversity.

Inevitability of destruction

The survival of agricultural people in a humid and hilly terrain of the Western Ghats depended upon certain clearance of the forests. Hill tops and slopes, generally not exceeding 1000m, were utilized for shifting cultivation, which involved both slash and burn as well as regrowth of forests.

The need for conservation

Settled in a landscape, which they knew very well for ages, the people would not recklessly clear of all the vegetation. In the words of Ashton (1988) :

"The Hindus have inherited perceptions of a people who have lived since ancient times in a humid climate particularly favourable for forest life. Settled people, they see themselves as one with the natural world, as both custodians and dependants. The people of India continue to harvest an astonishing diversity of products from the forest. Forests of the mountains and watersheds have traditionally been sacred; springs and the natural landscape in

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their vicinity have attracted special veneration. The Hindus learned from their predecessors millenia ago, a mythology, sociology and technology of irrigation that has enabled the most intensive yet sustainable agriculture humanity has so far devised".

The maturity of these remarks has been justified if we probe into the aspects of forest conservation in our local area by the indigenous people.

Conservation with consciousness

It may be argued that the forest dwelling tribals of the southern Western Ghats, as in Travancore, had no clear plans of forest conservation. It was not critical for them to do so since thery were dwellers of a zone, generally below 1000m, whereas the upper reaches of the slopes were almost clothed in primevial forests from which gushed down innumerable perennial springs. It seems they too had a system of sacred forests referring to which Bourdillon (1892) stated :

"Many pieces of forests are seen on the hills left untouched when the surrounding land has been cleared....because they are supposed to be each inhabited by some spirit."

Similar holds good for other parts of the Western Ghats as well. The tribal life, in general, is full of totems and taboos shaoping their attitude towards nature and helping to conserve it many ways.

The people along the densely populated west coast lived in houses surrounded by gardens of fruit trees, ornamentals etc.Most often the traditional households and (even today so in many cases) in a corner of the compound a small sacred grove of wild vegetation of trees entangled in creepers and dense undergrowth. Such groves are known as sarpakavus (serpent groves) or Bhagavatikacus (grove of the mother goddess or Durga); or both the dieties may be found in the same grove. In the 19th century Travancore there were about 15000 such groves (Pillai,1940). The villages had usually larger groves. The kavus are described as "sacred places where trees and plants were allowed top grow undisturbed and where reptiles, birds and animals could have free living". Whereas the groves of serpent and Durga are in the midst

of human habitation the Ayyappankavus existed in the mountain ranges (Nayar, 1987). There are serpent groves in Malabar coast as well as Karnataka coast. The Dakshina Kanada region has also several groves called Bhutasthans dedicated to Bhutas or spirits. The devarukadus of Coorg and the kans of Shimoga and Uttara Kannada, sometime hundreds of hectares in area are also sacred forest. In addition the entire countryside of the region is dotted with myriads of sacred trees. *Ficus* spp., now held by ecologists as keystone resorces of the tropical forest (Terborgh, 1986) have been held in India as sacred since pre-historical times.

Brandis (1897), the first Inspector General of Forests of India, was quite impressed by the sacred groves. He made special mention of the Devarakadus of Coorg in the Western Ghats. The Devarakadus often several hectares in area were set apart for Ayyappa. They were "untrodden by human foot and reserved for the abodes of hunting grounds of deified ancestors (The Imperial Gazetteer of India, 1980). Brandis and Grant (1868) even made a special report on the kans of Sorab.

Buchanan in 1801 alluded to the sacred groves of Uttara Kannada :

"The forests are the property of the gods of the villages in which they are situated, and the trees ought not to be cut without having leave from the Gauda or headman of the village."

THE KAN FORESTS OF KARNATAKA

Various British officers have been quite impressed by the system of kans particularly in the Western Ghat districts of Uttara Kannada, and Shimoga. Buchanan(1870) referred to some of the menasukans of Uttara Kannada, which were indeed lofty evergreen forest patches in which the local people took great care of the wild pepper. The taluk of Sorab in Shimoga is situated on an undulating plain on the western fringe of Deccan palteau bordering the Siddapur taluk of Uttara Kannada. Despite having a drier climate with rainfall nor exceeding 1500 mm per annum, here, even today, exist the lofty remains of numerous kans, which are the most remarkable instances of traditonal forestry of the Western Ghats by the village communities. Indeed, the elevation of Sorab

not exceeding 700 m, all the evergreen forests would have succumbed to the axe of the local population if they were not to be prudent.

Brandis and Grant (1868), in their report on the kans of Sorab observed that a high portion of Sorab was under forest. The forests were of two kinds, the dry and the evergreen or kan. During dry months jungle fires went through every part of the dry forest which was composed of deciduous trees and bamboo. But, "No fires enter the evergreen forest, leaves branches and fallen trees accumulate and gradually decay, forming ultimately a rich surface layer of vegetable mould". The authors wondered, "why a certain locality should be covered with evergreen, and another in its immediate vicinity with dry forest."

The kan forest was associated with the production of pepper, toddy from *Caryota urens*, coffee in some, leaves and branches for manure, jackfruit, mango etc. There were 171 kans in Sorab totalling an area of 32, 594 acres; in other words about 10% of the total land area of Sorab was covered with these kan forests. The dry forests, important from the point of timber production, were at the disposal of the government but the kans were entered in the revenue records as assessed lands held in regular tenure by wargdars or landholders in the vicinity. Some of the kans were unoccupied at the time of the survey by Brandis and Grant yielded no revenue. Unusually the kans had distinct boundaries marked by old trenches or footpaths. Most of the holders of the kans belonged to the Halepaiks or Namadharis who were also toddy drawers. They paid taxes to the government for their right of collecting non-wood produce from the kans. Each holder or warder had a portion demarcated by some lines or footpaths or other identification marks. The amount of pepper produced from kans, at one time was said to be "very great". Most other taluks of Shimoga also had kans, with Cowlidurg (Tirthally) leading with 436. Kadur Dt. (Chikmagalur) had a total of 128 kans.

Whereas such details of the kans of erstwhile Mysore kingdom were rather well documented a good survey was not carried out in Uttara Kannada which was under the Bombay presidency. It appears kan patches existed once from almost the

coastal villages to the most interior and there are still several existing in the district. They stand out distinctly as near climax vegetation from the surrounding forest patches. Notable are Kallabbekan, Katlekan, and Karikan. In Uttara Kannada, unlike in Shimoga, all the kan patches were made into state reserve forests by the British (Subash Chandran and Gadgil, 1991)

Kans as sacred groves

Kan functioned as the sacred forests of mostly the pre-Brahman communities of the region. Even today there are many villages in the region where kans act as temples of worship. In this regard they are comparable to the kavu of Kerala and Tamil Nadu, Devarakadu of Coorg and Devari of Maharashtra.

Kans and biodiversity

Kans ranging in area from an hectare or so to several hundred hectares, and protected from time immemorial, and be considered as the best samples of climax forests of the region. Gadgil and Vartak (1975) found that even smaller groves of Maharashtra harbour some old and magnificent specimens of trees and climbers. The larger groves are veritable treasure - trove for the naturalists. Lion tailed macaque, *Dipterocarpus indicus, Myristica* fatua var. *mangifica, Pinanga dicksoni, Mesua ferrea, Vateria indica, Leea guinensis etc.* in Uttara Kannda are mainly to be found in kan areas. Myristica swamp, an endangered habitat of the Western Ghats is found in Katlekan of siddapur.

Induchoodan (1988) recorded five species of Hopea from a kavu in Kerala, of which four are endemic to southwest India. Mohanan and Nair (1981) reported a genus new to India and a new species Kunstleraia keralensis, a leguminous climber from a kavu in Kerala.

In the tradional forestry kans, deverakadus, kavus and devarais, present almost in every village of the Western Ghats, would have functioned as safety forests. Whereas the community woodlots with regulated exploitation served as supply forest just as in Mizzoram (Malhotra, 1990). These forests enhanced landscape heterogenity, protected watershed and microclimate, aided in forest regeneration and supplied various non-wood produce. At

one time the Kans were the major sources of pepper for export.

COLLAPSE OF TRADITIONAL FORESTRY

Decline of the kans

Due to several reasons the kans, the symbols of traditional forestry and biodiversity conservation are on the decline.

1. Contract system was introduced in the kans of Uttara Kannada for collection of non-wood produce. The contractor used to extract produce in a wanton fashion causing much destrcution of the kans as in Kallabbe (Wingate, 1888)

2. As kans of Uttara Kannada became state forests people lost their control over them and got alienated from them.

3. In Sorab and rest of Shimoga as the dry forests were taken over by the government people had to depend on kans only for their timber and fuel wood requirements. This created several gaps in the canopy subjecting the kans to greater degradation and dessication. Today these kans, are too dry for production of pepper and coffee and have turned into semi-evergreens. Even roads pass through some of them (Gundettykoppakan). The Sorab town itself in spreading inside the Hiresekunikan of 120 ha area.

4. Collins (1922) reported that the degraded kans of Siddapur were getting infesed with weeds like Lantana.

5. In Sirsi and Siddapur taluks even kans were allotted as beta or leaf manure forests for the arecanut gardens. In Sirsi 769 hakans were added to the minor forest, open to exploitation by all (Collins, 1922). In Siddapur also similar treatment was given to some of the kans resulting in their total annihilation (Akkunjikan for instance). A survey carried out on traditional landuse in 25 km2 in Siddapur shows that the kans there have shrunk from about 6% of the total land area to 0.3%.

5. Kans were subjected to timber exploitation by forest based industries (Katlekan and Kallahbekan in Uttara Kannada). About 4000 ha of kans of Siddapur and Sirsi were subjected to selective logging of industrial timbers (Shanmukhappa, 1966)

6. Kans of 10 villages in Sirsi totalling an area of 672ha were in cluded in a forest working plan for exploitation (Thippeswami, 1963)

7. Some of the kans were even clear-felled and converted into monoculture of Eucalyptus (Menasikan in Siddapur).

8. Changes in religious outlook also have consequences on the kans and kavus. Temples or shrines started appearing inside these groves and following which the vegetation got totally neglected (Mariammanbana in Hittalkoppa village of Siddapur). Presumably scores of kavus in Kerala, where today there stand temples, with sacred ponds in their vicinity, were at one time entangled growth of wild vegetation.

9. Coffee introduced in the kans of Chikamagalur district app arently made at least some of the local Wargdars into estate owners

Erosion of biodiversity

The state claim over the forests of Western Ghats strengthened with the Britain consolidation of power by the beginning of 19th century. The control of the local communities over the forests steadily weakend and they got alienated from their resources. So much so when some small patches and degraded forests close to human habitation in Uttara Kannada were converted into common property resources termed as minor forests for exercising their traditional privileges the tree growth there was wiped out in no time. Unable to guard their village woodlots from the depredations of the neighbouring villagers several village communities resigned to the fate and themselves became a party to the liquidation of their own village woodlots as in the coastal villages of Kumta (Gadgil et al. 1990)

The 19th century witnessed the Western Ghat states, trying to exploit the forest ecosystems in a short sighted manner. Considerable areas of climax evergreen forests, including shola forests were cleared in the higher altitudes of Western Ghats for raising plantation crops, exotic trees, and for timber and firewood. In Travancore, for instance, during the mid 19th century, the government gave away forest lands at an upset price of one rupee per acre for raising coffee. By 1874, 39,400 acres of land, mostly virgin forests were sold to Europeans and a few natives. Coffee was raised in a very unscientific fashion. There was also an outbreak of coffee disease as well as a slump in the price. Most of

the coffee estates were abandoned while in some areas tea was substituted. In the catchment of Tamraparani, for instance, 5000 acres of coffee lands were wasted. In Neyyar basin out of 3200 acres sold for coffee only 300 acres remained, repalnted with tea. (Bourdillon, 1893).

Even remote shola forests were not spared. In the Silent Valley area, 400 ha of shola forest was cleared for raising coffee, between 1847 and 1873, and subsequently abandoned (Chandbasha, 1977). Many of the Nilgiri sholas were cleared. During 1850-55 Kotashala near Kotagiri was exploited and a total of 150000 tonnes of wood was removed from there. The area was later planted with *Acacia robusta* (Cleghorn, 1861)

The forests of the Western ghats also had to bear the persistent pressure of meeting the timber, forewood and bamboo requirements of the entire peninsular India. Heavy susbsidies were given to the forest based industries which came forward to process the timber and bamboo resources, resulting in sequential overexploitation (Gadgil and Subash Chandran, 1989)

Conclusion

People have been living as a part of the Western Ghat ecosystems since ages and having a stake in both sustainable utilization and conservation. They gained a wealth of knowledge on practical ecology through generations. This collective wisdom of the indigeneous people has been rather mocked at and they were treated as despicable lot. Hillmen were coaxed to undertake jobs as forest and estate coolies and trackers for the British sportsmen and native shikaries. The overall forest management pictures of British and post-British period, without participation of the local communities, are rather dismal and emphasizes the need for joint forest management.

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THE CONVENTION ON BIOLOGICAL DIVERSITY AND THE WILDLIFE PROTECTION ACT. (1992) *

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The Earth Summit held in June 1992 adopted the Convention on Biological Diversity (CBD). The Convention, which was signed by 171 countries including India during Rio has come into force with effect from December 29, 1993. India has ratified the Convention on February 18, 1994 and it has entered into force for India from May 19, 1994 i.e. 90 days after the ratification.

The Convention recognises and reaffirms the intrinsic value of biological diversity and the fundamental requirement of in situ conservation of ecosystems and natural habitats. It emphasises the importance of establishing and developing a system of protected areas where special need to be taken to conserve biological diversity. The Convention ordains contracting parties to develop and maintain necessary legislation and other regulatory provisions for the protection of threatened species and populations.

By ratisfying the Convention India has expressed its willingness to legally abide by its provisions.

At present protected areas (consisting of National Parks and Sanctuaries) representing 20 per cent of the total forest area represent the single most important method of conserving biodiversity and wildlife in India. The Wildlife Protection Act (1972) is the principal conservation legislation which deals with establishment and maintenance of protected areas. However the scope and functions of the Act are not broad and deep enough to translate the mandate of the Convention.

This paper highlights the inadequencies in the Wildlife Protection Act (1972) from the view point of CBD and suggests certain fundamental changes in the Act to harmonise the provisions of the Act with that of the Convention.

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1. The nineteen-seventies were a momentous decade for nature and wildlife conservation from the legal point of view. On the heels of the Stolkholm Conference of Human Environment, the Government of India enacted the cimprehensive Wildlife Protection Act, 1972. By the constitution (Forty-second Amendment) 1976, forest was removed from the State list and includedc in the Concurrent list in the Seventh Schedule. The Forty-second Amendment also included two new Articles-Article 48-A, providing for protection and improvement of environment and safeguarding of forest and wildlife in part IV-Directive Principles of State Policy and Article-51-A, a whole new chapter of Fundamental Duties, Article 51-A-(B) declares that it is the Fundamental Duty of every citizen to protect and improve the natural environment including forest and wildlife. The Forest Conservation Act-1980 prohibited state governments from denotifying Reserve Forests and transferring Reserve Forests and other forests for non-forest purposes without the approval of the union government.

2. The rapid decline of India's wild animals and birds, one of the richest and most varied in the world, has resulted in the Government of India enacting a comprehensive legislation for the protection of wildlife- The Wildlife Protection Act-1972. The Act has three main objectives:
   1. To be a comprehensive and uniform legislation for protection of wildlife throughout the country.
   2. To prevent and regulate hunting of and trading in wildlife or any product there of.
   3. To lay down the procedure for the establishment, maintenance and administration of areas as Sanctuaries and National Parks.

3-1. The State Governments may declare any area to be a Sanctuary if it considers the area is of adequate ecological, faunal and natural significance for the purpose of protecting, propagating, developing wildlife or its environment (S.18). When any area is so declared the Collector shall enquire into and determine the existence, nature and extent of the rights

of the persons or over the land comprised within the limits of sanctuary (S.19). The Collector shall publish a proclamation in the orginal language of the area requiring any person claiming any right a written claim within two months form the date of such proclamation specifying the nature and extent of such right the details of amount and compensation if any claimed (S.21) The Collector, will have the powers of a Civil Court and shall conduct a summary enquiry into the claims (S.22,23). If the claim is admitted by the Collector he may exclude such land from the limits of such Sactuary or may proceed to acquire such land or right under the Land Acquisition Act (1894)

3-2. A similar procedure is prescribed for the constitution of National Parks. Declaration by States Governments, proclamation by Collector, enquiry by the Collector, acquisition of rights if any and passing of the awards (S.35). The provisions of Sanctions 19 to 26 shall be applicable in the process of establishing a National Park. (S.35 (3).).

3-3 No grazing of any cattle shall be permitted in a National Park and no cattle shall be allowed to enter therein (S.35 (7)).

3-4. When the State Government transfers any area to the Central Government, if its is satisfied that conditions specified in Sec.18 are fulfilled in relation to the area transferred to it, it may declare such area to be a Sancturay. Similarly, if the transferred areas satisfied the legal requirements of section 35 the area may be declared a National Park (S.38)

3-5. Hunting of any wild animal specified in Schedule - I,II,III & IV anywhere is an offence (Sec.9).No person shall hunt any wild animal specified in Schedule II, III and IV except under valid licence issued by the Chief Wildlife Warden (S.9 (1) to (5)). The Chief Wildlfe Warden may order for the hunting of any dangerous wild animal. Killing or wounding in good faith of any wild animal in self defence shall not be an offence (S.11 (2)). No person other than public servants on duty, authorised officers, or persons who have right over immovable property within the limit of the Sanctuary shall enter or reside in the Sanctuary (S.27). No person shall hunt

any wild animal in a Sanctuary (S.29). Kindling any fire in a Sanctuary to endanger such Sanctuary, carrying weapon inside the Sactuary and use of chemical and other explosives in a Sanctuary will amount to offences under the Act (Ss. 30,31,32).

3-6. Chapter V. (Section 39 to 49) regulate trade and commerce in wild animals, animal article and trophies.

3-7. Chapter VI, (Sections 50 to 58) deals with prevention and detection of offences. Any Forest Officer, or Police Officer not below the rank of a Sub-Inspector, may if he has reasonable grounds for believing that any person has cammited an offence under the Act, may arrest the person without a warrant and detain him. (S.50). Any person who contravenes provisions of the Wild life Protection Act shall on conviction be punished with imprisonment for a term which may extend to two years with a fine of Rs. 2,000/-. If the offence is committied inside the Sanctuary or National Park, the minimum, punishment shall be imprisonment for a term of six months. The imprisonment may extent up to six years. For second and subsequent offences the term of imprisonment shall not be less than one year plus a fine of one thousand rupees. (S.51).

3-8. The Wild life (Protection) Amendment Act. 1991 (Act 44 of 1991) enlarged the scope of the principal Act. The amended Act provided for the protection of plants along with wild animals and birds. A new schedule, Schedule VI of "Specified Plants" was added to the principal Act for this purpose. A new chapter. "Chapter III-A-Protection of Specified Plants" to protect the specified plants was also added to the Act (Ss 17A to 17H).

3-9. Another major change introduced by the amendment Act is in respect of the procedure for constitution of Sactuaries. The principal Act provided for an uniform procedure in respect of all lands that were to be declared as Sacturaries under Ss18 to 26. By amending sub-section (1) of Sec. 18 and inserting a new section, section 26-A, the amending Act excluded "Reserve Forests" from the purview of Sections 18 to 26 of the

principle Act. The consequences of this was far reaching. Now any Reserve Forest, after fixing the boundry, can be declared as a Sanctuary under this new Section 26-A. However the procedure laid down by the principle Act for constitution of Sanctuaries will continue in respect of lands which are not "Reserve Forests".

3-10. The amended Act provided for more stringent punishment for violation of the provisions of the principle Act. Any person who contravizes the provisions of the Wild life Protection Act shall on conviction be punished with imprisonment for a terms which may extend to three years with fine which may extend to twentyfive thousand rupees. If the offence is committed inside the Sanctuary or National Park, the imprisonment may extend upto six years. A minimum fine of Rs.5,000/- is also prescribed. For second and subsequent offences the term of impresonment shall not be less than two years and the fine shall not be less than ten thousand rupees.

4-1. The basic difference between a Sanctuary and a National Park lies in the legal stringency. A Sanctuary allows the retention of some rights of the people in the protected areas'. The National Parks strictly prohibits all sorts of peoples rights.

4-2. From the foregoing it becomes clear that Wildlife Protection Act is a regulatory legal apparatus. The basic idea behind this Act is to set apart an area as a protected one for exclusive preservation of wild animals, flora and fauna. The Act positively discourages human habitation inside the Sanctuaries and Parks. The forests dwellers are treated as treaspassers, their very presence in the area will attract the penal provisions of the Act. They cannot live inside the Sactuaries and Parks; the Act curtails the rights of free movement of the local people inside the protected areas. The Act prohibits any kind of exploitations of natural resources inside the protected areas. The forest dwellers are not allowed to collect fuelwood, fruits and roots and small timber to construct their huts. These faceless people are not

allowed to carry their traditional arms and weapons inside the forests. And above all they are prohibited from grazing their cattle inside the Sactuaries and Parks.

5. The number of Sactuaries and National parks have increased about five times in the last twenty years (now there are 75 National Parks and 421 Sancturies covering 4.2 percent of the total land mass) and consequently the number of wild animals have also gone up. But this has also led to increasing conflicts between the local people and forest authorities. It is but natural since under the Wildlife Protection Act people's interest and wildlife interest are perceived to be antagonistic to each other. Under the scheme of existing legislations in general and that of the Wildlife Protection Act in particular, people are considered to be a negative factor in the preservation of forests and wildlife; man is not considered as 'part' of nature but 'apart' from and 'outside' of it. Hence the principles of joint forest management and sharing the fruits of conservation as enuciated in the National Forest Policy cannot be hermoniously integrated into the existing legal framework.

6-1. The National Forest Policy 1988 was turning point in the conservation perspective in the post independence era. It was for the first time that any forest policy has recognised that tribals and forest communities were living in the forest and that they were entitled to share the benefits of conservation.

6-2. The basic objectives of the National Forest Policy include maiantenance of environmental stability, conserving natural heritage, increasing forest cover, meeting the biomass requirement of tribal and rural population and making conservation a people's movement. Protecting, improving and enhancing the production of minor forest produce to provide subsistence to tribal and other communities residing in the forest was considered to be essential for forest management. Some of the provisions are worth quoting:

"The holders of customary rights and concessions in forest areas should be motivated to identity themselves with the protection and development of forests from which they derive

benefits. The rights and concessions from forests should primarily be for the bonafide use of the communities living within and around forest areas, specially the tribals. (4.2.4.2).

The life of tribals and other poor living within and near forests revolves around forests. The rights and concessions enjoyed by them should be fully protected. Their domestic requirements of fuelwood, fodder, minor forest produce and construction timber should be the first charge on forest produce. These and substitute materials should be made avaliable through conveniently located depots at reasonable prices. (4.3.4.3).

Having regard to the symbiotic relationship between the tribal people and forests, a primary task of all agencies responsible for forest management, including the forest development cooperations should be to associate the tribal people closely in the protection, regeneration and development of forests as well as to provide gainful employment to people living in and around the forest. While safeguarding the cousomary rights and interests of such people, forestry programmes should pay special attention to the following..... (4.6).

Appropriate ligislation should be undertaken, supported by adequate infrastructure, at the Centre and State levels in order to implement the Policy effectively. (4.15)"

7. The National Forest Policy 1988 demands that conservation, development and social equity should go together. It is for the first time that any forest policy had recognised that human being were living in the forest. The policy is based on the principle of 'caring and sharing' of the forests; any joint and participatory management of the forest and sharing of its produce by people can only be within the conservation objectives. Claims of conservation need not compete with those of subsistence survival rights of the marginalised people under the new Forest Policy and Policy Statement of Environment and Development.

8. The National Conservation Strategy and Policy Statement on Environment and Development (1992) reiterates the action plan and conservation strategy of the National Forest Policy 1988.

9. During the last nearly five decades the governments continued the colonial approach and had passed many legislations that aimed at greater governmental control; that the democratic set up envisaged a people oriented approach was neither comprehended nor appreciated by the legislature. With the result, the existing forests and wildlife enactments are a collection of haphazard laws without any policy based theoretical framework. The Wildlife Protection Act (1972) represents one such legislation.

10-1. The main objectives of the Convention on Biological Diversity (CBD) are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising from the use of biodiversity components guaranteeing fair returns to traditional communities for their continuing contribution in conservation.

10-2. The CBD recognises and reaffirms the intrinsic value of biological diversity, the fundamental requirement of in situ conservation of ecosystems and natural habitats and their maintenance and the traditional dependence of local communities on biological resources and the desirability of sharing the benefits equitably.

The scope and impact of this Convention is for reaching but complex; it goes far beyond conservation aspects of biodiversity into the realm of complex issues of international access to genetic material, intellectual property rights, and technology transfer relevant to conservation. India has to establish the appropriate legislative mechanism to enforce the provisions of this Convention since CBD has come into force and is now an international treaty.

10-3. The scope of the CBD with reference to the various legal aspects concerning it's multifold issues is too wide to attempt a single comprehensive umbrella legislation. Such an all-encompassing Biological Diversity Act (Proposed) is neither possible nor desirable. It is understood that the Government of India is making an effort for finalising the elements for formulation of such an unbrella legislation. Such an exercise even if completed satisfactory, can only cover some of the

elements identified in the conservation that require legal support. This writer is of the considered opinion, that under these circumstances, it is proper and necessary for the Government of India to draw up and adopt a National conservation Biological Diversity Policy Statement based on the principles of CBD. It is pertinent to note that the principles of the National Forest Policy - 1988 of Government of India can be harmoniously integrated into such a National Biodiversity conservation Policy Statement (Proposed). But this initiative, if and when adopted, will be a long drawn, time consuming process. In this not too clear, but emerging situation, the Government of India has the option of separately legislating a comprehensive Wildlife Protection Act based on the principles of CBD in respect of in situ conservation of wild fauna and flora in natural ecosystems and habitats. Such an initiative is both appropriate and necessary. And the initiative becomes all the more relevant at a time when the Government of India had appointed an inter-state committee to review the twentyfour year old Wildlife Protection Act (1972).

10-4. The Wildlife Protection Act (1972), the principal conservation enactment which protects the biodiversity-rich protected areas in India, representing 4.2 percent of the total land area and one fifth of forest area in the country, should be entirely recast to incororate the conservation concerns of the CBD (and in particular the ones listed below) to bring forth the new Wildlife Protection Act (Proposed).

11-1. The following provisions of CBD and the underlying principles therin should form the basis for the legal framework of the new Wildlife Protection Act (Proposed).

11-2. Need For New Legislations And Programmes:

(A) Article 6: Under this Article, India, as a contracting party is committed to develop national strategies, plans or programmes for conservation and sustainable use of biological diversity'. For this purpose India can adopt the existing strategies plans and programmes which shall reflect the conservation concerns of the

Convention.

(B) Article 8 (k): Under this article India is committed to develop or maintain necessary legislation and other regulatory provisions for the protection of threatened species and populations.

The combined effect of these two Articles, 6 (a) and 8 (k), in plain langauage, is that India should draw up necessary plans and programmes and enact necessary legislations for the purpose of conservation of biodiversity and its sustainable use reflecting the measures set out in the Convention.

11.2.1 The National Conservation Strategy and Policy Statement on Environment and Development (1992), adopted by India on the eve of the Rio Summit is a good beginning. But it is too brief, bague in terms of concrete plans and inadequate in the overall context of the Convention.

11.2.2 The National Wildlife Action Plan (1993) sets out priorities for wildlife conservation. This plain is also sketchy and inadequate.

11-3. Biodiversity Conservation: Nature of Biodiversity And Its Components:

(A) Preamble (10) emphasises that the fundamental requirement for the conservation of biological diversity is the in-situ conservation of ecosystem and natural habitats and maintenance of recovery of viable populations of species in their natural surrounding.

(B) Annex 1: Refers to ecosystems and natural habitats as the component of biodiversity in situ conservation. It is obvious the primary focus of CBD is on wild fauna and flora in their natural surroundings.

(C) Article 2: Deals with use of terms-These are definitions. Key terms and phrases like "Biological Diversity", "Biological Resosurces", "Ecosystems", "Habitat", "In-situ Conservation", and "Protected Area" have been defined.

Most of these definitions are clear and comprehensive. Some of them terms like "Biological Diversity", "Ecosystems" and "Habitats" etc. are key terms for any conservation enactment and should be used in the new Wildlife Protection Act (Proposed).

11-4. Biodiversity Conservation With Indigenous And Local Communities:

preamble (12), Article 1 and Article 8 (j) of CBD deal with equitable sharing of benefits-arising out of use of biodiversity resources and traditional knowledge of indigenous and local communities:

The right of the indigenous and local communities over the biodiversity resosurces are taken into consideration for the purpose of fair and equitable sharing of benefits (Art.1) The Convention commits nations to respect, preserve and maintain knowledge, innovations and practices of the communities relevant for the conservation and sustainable use. The knowledge and practices of these people should be promoted for their wider application. Their consent and involvement are necessary for such use. The benefits arising from the utilisation of such knowledge, innovations and practices of the said people should be shared equitably. (Art. 8(j) The Preamble (12) to the CBD recognises the close and traditional dependence of indigenous and local communities on biological resources of their habitats. It also recognises the desirability of sharing benefits arising from the sustainable use of its components and the traditional knowledge relevant to the conservation of biodiversity. While Art.1(Objectives) of CBD refers to equitable shariang of benefits arising out of the sustainable use of components of biodiversity, Art.8 (j) refers to the benefits arising out of the wider application of traditional knowledge of local communities relevant to conservation and sustainable use. The Preamble (12) combines the impact of the two Articles Art.1 & 8 (j) and commits nations to share the benefits of using such components of biodiversity and traditional knowledge with the local communities that owned, natural resources and the traditional knowledge.

Thus, it will be seen, whens these three Articles of CBD are harmoniously integrated, constructed and interpreted, one underlying principle that emereges is that of 'caring and sharing,' - caring for the conservation leading to sharing of the benefits of conservation. As mentioned earlier, the National Forest Policy 1988 is also based on the equitable principle of caring and sharing.

11-5.1 The Rio Declaration of Environment and Development and the Agenda 21 were two of the treatise adopted in the Earth Summit along with CBD. The following passages are worth quoting in this context:

11-5.2 Conservation of Biological Diversity: - AGENDA-21

Effective national action and international cooperation are required for the in situ protection of ecosystems, for the ex situ conservation of biological and genetic resources and for the enhancement of ecosystem functions. The participation and support of local communities are elements essential to the success of such an approach.

Governments should recognize and foster the traditional methods and the knowledge of indigenous people and their communities, emphasizing the particular role of women, relevant to the conservation of biological diversity and the sustainable use of biological resources, and ensure the opportunity for the participation of those groups in the economic and commercial benefits derived from the use of such traditional methods and knowledge.

Recognizing and strengthening the role of indigenous people and their communities: - AGENDA - 21

Indigenous people and their communities have an historical relationship with their lands and are generally descendants of the original inhabitants of such lands. In the context of this chapter the term "lands" is understood to include the environment of the areas which the people concerned traditionally occupy.

Governments should aim at fulfilling the following objectives:-

Recognition that the lands of indigenous people and their communities should be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate. Recognition that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well being of indigenous people and their communities.

- AGENDA - 21

Some indigenous people and their communities may require, in accordance with national legislation, greater control over their lands, self-management of their resources, participation in development decisions affecting them, including, where appropriate participation in the establishment or management of protected areas. The following are some of the specific measures which Governments could take: Adopt or strengthen appropriate policies and or legal instruments that will protect indigenous intellectual and cultural property and the right to preserve customary and administrative systems and practices.

- AGENDA - 21

11-5.3 Priniciple 22: Indigenous people and their communities, and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interest and enable their effective participation in the achievement of sustainable development.

- The Rio Declaration on Environment and Development.

11-5.4 The Man and Biosphere (MBA) Programme of UNESCO launched in 1971 and adopted in India from the middle of nineteen eighties, also advocated that the undisturbed natural ecosystems cannot be protected simply through attempts to keep all human influence out of it. It advocated, rather, that conservation must be an open system in which undisturbed natural areas can be surrounded by areas of sympathetic and compatible use. According to MAB programme, each Reserve has been designed to consist of the following four zones:

1. Core Zones: Critical for Conservation-Minimum human interference.
2. Manipulative of Buffer Zone : Traditional activites- permitted in controlled manner.
3. Restoration Zone: Emphasis on reclamation of degraded areas.
4. Stable or Cultural Zone: To Protect and study the on-going

land use practice and culture in harmony with environment.

The new Wildlife Protection Act (Proposed) should retain the principles of MAB-programme and in particular the concept of "Zones" within protected areas. It is essential that no area with human inhabitation (however minimal it may be) should be classified as Core Zones.

12. Identifiying And Monitoring Important Components Of Biodiversity:

Article 7 of the CBD commits countries to identify components of biodiversity important for its conservation and sustainable use in regard to biodiversity-rich areas indicated in Annex I. The components so identified should be monitored through appropriate techniques. Special attention should be paid to those requiring conservation measures and those which offer greater potential for sustainable use. Activities and processes which have an adverse impact on conservation of biodiversity and its sustainable use should also be similarly monitored. The data derived from such identification and monitoring should be maintained and organised by appropriate mechanism.

13. In-situ Conservation-Protection Of Ecosystems, And Natural Habitats:

Article 8 of the Convention is the most important provision from the view point of in situ conservation of wildlife in their ecosystems and natural habitats. This provision ordains the Governments to take the following measures for the purpose of conservation:

(1) Should protect ecosystems, natural habitats and maintain viable populations of species in natural surroundings.

(2) Should establish protected areas where special measures need to be taken for conservation of biodiversity.

(3) Should develop guidelines for selection, establishment and management of such protected areas.

(4) Should regulate or manage biological resources, important for biodiversity conservation in such protected areas and out side to ensure their conservation and sustainable use.

(5) Should promote development that are environmentally sound and sustainable in areas adjacent to protected areas

with a view to furthering protection of these areas.

(6) Should restore degraded ecosystems and promote the recovery of threatened species through appropriate plans, strategies and measures.

(7) Should monitor regulate and control risks arising out of release of modified living organisms resulting from biotechnology which are likely to have adverse environmental impact on conservation and sustainable use of biodiversity and also human health.

(8) Should prevent the introduction of, or control or eradicate alien species which threaten the natural biodiversity.

(9) Should respect, preserve and maintain the knowledge and wisdom of people living close to earth, relevant for conservation and sustainable use of biodiversity. The wider application of such knowledge and wisdom should be promoted with their consent and the benefits of such sharing should be equitably shared with them.

(10) Should enact necessary ligislation and regulatory provisions for the protection of endangered species.

The foregoing mandatory provisions and the principles underlying therein are critical for conservation of biodiversity and their sustainable use and also for equitably sharing the benefits with the holders of indigenous wisdom relevant in the context. These priniciples should form the legal framework for the new Wildlife Protection Act (Proposed). By carefully incorporating these principles in the proposed enactment, the Government can legislate a new Act which is more effective and equitable than the present Protection Act, Wildlife Act.

14. Sustainable Use Of Components Of Biodiversity:

Article 10 of CBD commits Governments to do the following in the context of sustainable use of biodiversity and their components:

(1) Should adopt measures relating to the use of bio-resources to avoid or minimize adverse impacts on biodiversity.

(2) Should protect and encourage customary use of bio-resources in accordance with traditional cultural practices that are compatible with conservation or

sustainable useage.

(3) Should support local populations to develop and implement remedial action in degraded areas where biodiversity has been reduced.

15. The fundamental difference between the Wildlife Protection Act (1972) and the Convention of Biological Diversity (1992) lies in their objectives; while the former treats the human component alien to conservation concerns the later identifies local communities and indigenous people, that hitherto conserved the biodiversity, as one of the factors in the conservation strategy and for sharing the benefits of biodiversity. The CBD, unlike the Wildlife Protection Act, harmoniously integrates both the macro and micro perceptions of biodiversity conservation namely 'Caring and Sharing' the biodiversity into its objectives. In this regard CBD is in consonance with the National Forest Policy (1988). The underlying principle of the Wildlife Protection Act is' "preservation of parks without people", a principle that is bound to fail in the long run unless remedied at the right time-now. Any sustainable conservation strategy must aim at an integrated and interdependant natural system of which fauna, flora and humans are integral contituents, i.e. 'bio-contnic'.

16. No conservation strategy will secceed in India unless the biomass requirements of the local communities like the tribals and other forest dwellers are harmoniously integrated into the strategy. The present conservation strategy has a dimension of alienation of local communities. These local communities like the tribals and other forest people, who strive for the recognition of their land rights, have frequently emphasised their rights regarding the place they live in-this is the right to their own environment. The environment, is first of all, the place people live in. In the present context it is the Protected Areas- Sactuaries and National Parks. These areas being a treasure house of biodversity, require respect due to its intrinsic value. But the obligation to treat the Protected Areas in a respectful way should be balanced by a

certain basic rights of people to have a say about their own environment. These rights include their dependence upon the biological resources in their immediate environment for daily needs like food, fuel, fodder, drinking water, herbs and small timber for their shelter. The rights of these people to the natural resources also serve a pragmatic reason. The local communities are often in a better position to take on responsibility for the sustainable management of their resources. However, one cannot expect them to take up this responsibility if their rights to their environments are neglected and if the benefits of such sustainable management are not shared with them in a fair and equitable way.

17. The Convention on Biological Diversity does not treat indigenous and forest communities as alien elements to the biodiversity rich ecosystems and natural habitats, Nor does it suggest their displacement from the protected areas as part of conservation imperatives or strategies. The CBD, could and should become, a rallying point for realising the required policy and legal changes for harmoniously integrating the livelihood security of marginalised forest communities including the tribals, into the conservation concerns of biological diversity, in the Indian context.

18. Summary of Suggestions-Recomendations:

(1) The twenty four year old principal enactment for protection of wildlife in India, the Wildlife Protection Act, treats the human component as alien for conservation of biodiversity. The Act should be reviewed in the context of the Convention on Biological Diversity.

(2) The scope, objectives and range of the CBD with reference to the various legal aspects concerning its multifold issues is too wide and complex to ateempt a single comprehensive umbrella legislation. A comprehensive legislation for the conservation of wild fauna and flora in natural and in-situ conservation is both possible and appropriate. The Wildlife Protection Act (1972) should be replaced by the proposed

comprehensive Wild life Protection Act (Proposed) incorporating relevant provisions of the CBD.

(3) The following principles and strategies of conservation of biodiversity of CBD should form the legal framework for the proposed Act:

(A) Preamble should incorporate human element as a component of conservation of wild fauna and flora as well as sharing of its benefit.

(B) Defination clause: Terms like, "Biological Diversity", "Sustainable Use", "Protected Areas", and "Sustainable Use", defined in the CBD and not defined in the WPA, should be incorporated in the proposed legislation.

(C) The Man And Biosphere (MAB) programme of UNESCO advocates zoning the Biosphere Reserves into "Core" , "Buffer", "Restoration", and "Culture" zones. MAB treats people as part of parcel of the Bisophere Reserves. The concept of "zoning" the reserves, if pragmatically utilised can make the conservation strategy more effective. These zones souuld be defined and incorporated in the difination section of the proposed Act. Human settlement within protected areas should be classified as "Social Zones" within a Biosphere Reserve.

(D) Article 2 read with Preamble (10) and the Annex.1 of CBD should be harmoniously infused into one single provision in the Proposed Act and the focus of the new Act should be conservation of that "entity" which may be brodly called the "Wild Biodiversity".

(E) Article 1 and Article 7 (j) read with Preamble (2) of the CBD should form the basis for introducing the "human factor" into the conservation strategy of the new Act. Relevant provisions in the Rio Declaration on Environment And Development, Agenda-21, and the National Forest Policy (1988) are pointers in this direction,.

(F) Article 8 of CBD is the most important Article for conservation of Wildlife in natural habitats and the

prinicples of this Article should be eleaborated and transformed into effective legal provisions in the proposed Act.

Notes and References:

1. Convention on Biological Diversity - 1992 - Adopted at Rio de Janeiro, Brazil.
2. The Wildlife Protection Act (1972) as amended by The Wildlife Protection (Amendment) Act (1991).
3. Man And Biosphere (MAB) 1971. - UENESCO and UNEP - Minsk (USSR) MAB - Programme.
4. Agenda-21-1992 Adopted at Rio de Janeiro, Brazil.
5. Rio Declaration on Environment And Development - 1992 - Adopted at Rio de Janerio, Brazil.
6. The National Forest Policy Statement - 1988 - Ministry of Environment and Forests, Government of India, New Delhi.
7. The National Conservation Strategy and Policy Statement on Environment And Development - 1992 - Ministry of Environment and Forests, Government of India. New Delhi.
8. The National Wild Life Action Plan (1993) - Ministry of Enviornment and Forest, Government of India, New Delhi.
9. Krishnan, B.J. 1994. 'Legal Implications of Joint- Participatory Protected Area Management': 'Possibilities of Joint Management of Protected Areas' compilation of papers presented at the workshop-Indian Institute of Public Administration - Sage Publications, New Delhi.
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DOCUMENTS

THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT

The United Nations Conference on Environment and Development, having met at Rio de Janeiro from 3 to I4 June 1992, reaffirring the Declaration of the United Nations Conference on the Human Environment, adopted at Stockbolm on 16 June 1972, and seeking to build upon it, with the goal of establishing new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people, working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmentaal system, recognizing the integral and interdependent nature of the Earth, our home, proclaims that:

Principle 1: Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle 2: States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of natioal jurisdiction.

Principle 3: The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4: In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5: All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6: The special situation and needs of developing

countries, particularly the least developed and those mos environmentally vulnerable, shall be given special priority International actions in the field of environment and developmen should also address the interests and needs of all countries.

Principle 7: States shall cooperate in a spirit of globa partnership to conserve, protect and restore the health an integrity of the Earth's ecosystem. In view of the differen contributions to global environmental degradation, States hav common but differentiated responsibilities. The developec countries acknowledge the responsibility that they bear in th international pursuit of sustainable development in view of th pressures their societies place on the global environment and of th technologies and financial resources they command.

Principle 8: To achieve sustainable development and a higher quality of life for all people, States should reduce an eliminate unsustainable patterns of production and consumptio and promote appropriate demographic policies.

Principle 9: States should cooperate to strengthe endogenous capacity-buildiang for sustainable development b improving scientific understanding through exchanges of scientifi and technological knowledge and by enhancing the development adaptation, diffusion and transfer of technologies, including nev and innovative technologies.

Principle 10: Environmental issues are best handled with th participation of all concerned citizens, at the relevant level. At th national level, each individual shall have appropriate access t information concerning the environment that is held by publi authorities, including information on hazardous materials an activities in their communities, and the opportunity to participat in decision-making process. States shall facilitate and encourag public awareness and participation by making information widel available. Effective access to judical and administrative procedure including redress and remedy are provided.

Principle 11: States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12: States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdication of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13: States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expenditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14: States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human helth.

Principle 15: In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16: National authorities should endeavour to promote the internalization of environment, costs and the use of

economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17: Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Principle 18: States shall immediately notify other States of any natural disasters or other emeregencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

Principle 19: States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20: Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21: The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22: Indigenous people and their communities, and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interest and enable their effective participation in the achievement of sustainable development.

Principle 23: The environment and natural resources of people under oppression domination and occupation shall be protected.

Principle 24: Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict

and cooperate in its further development, as necessary.

Principle 25: Peace, development and environmental protection are interdependent and indivisible.

Principle 26: States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27: States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

CONVENTION ON BIOLOGICAL DIVERSITY

Arrangement

PREAMBLE

The Contracting Parties

Conscious of the intrinsic value of biological diversity and the ecological, genetic, social, economic, scientific, education cultural, recreational and aesthetic value of biological diversity a its components.

Conscious also of the importance of biological diversity evolution and for maintaining life sustaining systems of t biosphere,

Affirming that the conservation of biological diversity is common concern of humankind.

Reaffirming that States have sovereign rights over their ov biological resources.

Reaffirming also that States are responsible for conservi their biological diversity and for using their biological resources a sustainable manner,

Concerned that biological diversity is being significan reduced by certain human activities,

Aware of the general lack of information and knowled regarding biological diversity and of the urgent need to devel scientific, technical and institutional capacities to provide the ba understanding upon which to plan and implement appropria measures.

Noting that it is vital to anticipate, prevent and attack t causes of significant reduction or loss of biological diversity source,

Noting also that where there is a threat of significa reduction or loss of biological diversity, lack of full scienti certainty should not be used as a reason for postponing measu to avoid or minimize much threat,

Noting further that the fundamental requirement of t conservation of biological diversity is the *in-situ* conservation

ecosysems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings,

Noting further that *ex-situ* measures, preferably in the country of origin, also have an important role to play,

Recognizing the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components,

Recognizing also the vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation.

Stressing the importance of and the need to promote international, regional and global cooperation among States and intergovernmental organisations and the non-governmental sector for the conservation of biological diversity and the sustainable use of its components.

Acknowledging that the provisions of new and additional financial resources and appropriate access to relevant technologies can be expected to make a substantial difference in the world's ability to address the loss of biological diversity.

Acknowledging further that special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies,

Noting in this regard the special conditions of the least developed countries and small island States,

Acknowledging that substaintial investments are required to conserve biological diversity and that there is the expectation of a broader range of environmental, economic and social benefits from those investments,

Recognizing that economic and social development and poverty eradication are the first and overriding priorities of developing countries.

Aware that conservation and sustainable use of biological diversity is of critical importance for meeting the food, health and other needs of the growing world population, for which purpose access to and sharing of both genetic resources and technologies are essential,

Noting that, ultimately, the conservation and sustainable use of biological diversity will strengthen friendly relations among States and contribute to peace for humankind,

Desiring to enhance and complement existing international arrangements for the conservation of biological diversity and sustainable use of its components, and

Determined to conserve and sustainably use, biological diversity for the benefit of present and future generations,

Have agreed as follows:

Article 1. Objectives

The objectives of the Convention to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

Article 2. Use of Terms

For the purpose of this Convention:

"Biological diversity" means the variability among living organisms from all sources including *inter alia*, terrestrial, marine and other aquatic ecosystem and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.

"Biological resources" includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystem with actual or potential use or value for humanity.

"Biotechnology" means any technological application that uses biological systems, living organism, or derivatives thereof, to make or modify products or processes for specific use.

"Country of origin of genetic resources" means the country which possess those genetic resources in *in-situ* conditions.

"Country providing genetic resources" means the country supplying genetic resources collected from in-situ sources, including populations of both wild and domesticated species or taken from *ex-situ* sources, which may or may not have originated in that country.

"Domesticated or cultivated species" means species in which the evolutionary process has been influenced by humans to meet their needs.

"Ecosystem" means a dynamic complex of plant, animal and micro- organism communities and their non-living environment interacting as a functional unit.

"Ex-situ conservation" means the conservation of components of biological diversity outside their natural habitats.

"Genetic material" means any mateiral of plant, animal, microbial or other origin containing functional units of heredity.

"Genetic resources" means genetic material of actual or potential value.

"Habitat" means the place or type of site where an organism or population naturally occurs.

"In-situ conditions" means conditions where genetic resources exists within ecosystem and natural habits, and in the case of domesticated or cultivated species, in the surrounding where they have developed their distinctive properties.

"In situ conservation" means the conservation of ecosystem and natural habitats and the maintenance and recovery of viable population of species in their natural surroundings and in case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

"Protected area" means a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.

"Regional economic integration organization" means an organisation constitutes by sovereign States of given region, to which its member States have transferred competence in respect of matters governed by this Convention and which has been duly

authorised, in accordance with its internal procedure, to sign, ratify, accept, approve or acceded to it.

"Sustainable use" means the use of components of biological diversity in a way and at a rate that does not lead to long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

Technology means Biotechnology

Article 3. Principle

State have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign rights to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Article 4. Jurisdictional Scope

Subject to the rights of other States, and except as otherwise expressly provided in this Convention the provisions of this Convention apply, in relation to each Contracting Party:

(a) In the case of components of biological diversity, in areas within the limits of its national jurisdiction and

(b) In the case of process and activities, regardless of where their effects occur carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.

Article 5. Cooperation

Each Contracting Party shall as far as possible and as appropriate, cooperate with other Contracting Parties directly, or where appropriate, through competent international organisations, in respect of areas beyond the national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.

rticle 6. General Measures for Conservation and Sustainable se

Each Contracting Party shall in accordance with its particular nditions and capabilities:

(a) Develop national strategies, plans or programme for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programs which shall reflect *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned; and

(b) Integrate, as far as possible and as appropriate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programs and policies.

Article 7, Identification and Monitoring

Each Contracting Party shall, as far as possible and as appropriate, in particular for the purpose of Article 8 to 10:

(a) Identify components of biological diversity important for its conservation and sustainable use having regard to the indicative list of categories set down in Annexure I;

(b) Monitor, through sampling and other techniques, the components of biological diversity identified pursuant to subparagraph(a) above, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use;

(c) Identify processes and categories of activities which have or are likely to have significant adverse impact on the conservation and sustainable use of biological divesity and monitor their effects through sampling and other techniques; and

(d) Maintain and organize, by any mechanism data, derived from identification and monitoring activities pursuant to subparagraphs (a); (b) and (c) above.

Article 8. *In-situ* Conservation

Each Contracting Party shall, as far as possible and as appropriate :

(a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;

(b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity.

(c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensure their conservation and sustainable use;

(d) Promote the protection of ecosystem, natural habitats and the maintenance of viable populations of species in natural surroundings;

(e) Promote environmentally sound and sustainable development in the areas adjacent to protected areas with a view to furthering protection of these areas;

(f) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, *inter-alia*, through the development and implementation of plans or other management strategies;

(g) Establish or maintain means to regulate, manage or control the risk associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risk to human health;

(h) Prevent the introduction of, control or eradicate those alien species which threaten ecosystem, habitat or species;

(i) Endeavour to provide the conditions needed for compatibility between present use and the conservation of biological diversity and the sustainable use of its components;

(j) Subect to its national legislation, respect, preserve, and maintain knowledge, innovations and practices of

indigeneous and local communities embodying traditional lifestyle relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of benefits arising from the utilization of such knowledge innovations and practices;

(k) Develop or maintain necessary legislation and/or regulatory provisions for the protection of threatened species and populations;

(l) Where a significant adverse effect on biological diversity has been determined pursuant to Artilce 7, regulate or manage the relevant process and categories of activities and

(m) Cooperate in providing financial and other support for *in situ* conservation outlined in sub-paragraphs (a) to (l) above, particularly to developing countries.

Article 9. *Ex-situ* Conservation

Each Contracting Party shall, as far as possible and as appropriate, and predominantly for the purpose of complementing *in-situ* measures:

(a) Adopt measures for the *ex-situ* conservation of components of biological diversity, preferably in the country of origin of such components;

(b) Establish and maintain facilities for *ex-situ* conservation and of research on plants, animals and micro-organisms, preferably in the country of, origin of genetic resources;

(c) Adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate conditions;

(d) Regulate and manage collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystem and *in-situ* population of species, except where special temporary ex-situ measures are required under subparagraph (c) above;

and

(e) Cooperate in providing financial and other support for *ex-situ* conservation outlined in subparagraphs (a) to (d) above and in the establishments and maintenance of *ex-situ* conservation facilities in developing countries.

Article 10. Sustainable Use of Components of Biological Diversity

Each Contracting Party shall, as far as possible and as appropriate:

(a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;

(b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impact on biological diversity;

(c) Protect and encourage customary use of biological resources in accordance with traditional culture practices that are compatible with conservation or sustainable use requirements;

(d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and

(e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

Article 11. Incentive Measures

Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound measures that act as incentive for the conservation and sustainable use of components of biological diversity.

Article 12. Research and Training

The Contracting Parties taking into account the special needs of developing countries, shall:

(a) Establish and maintain programs for scientific and technical education and training in measures for the identification, conservation and sustainable use of

biological diversity and its components and provide support for such education and training for the specific needs of developing countries;

(b) Promote and encourage research which contribute to the conservation and sustainable use of biological diversity, particularly in developing countries; inter-alia, in accordance with decisions of Conference of the Parties taken in consequence of recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice; and

(c) In keeping with the provisions of Article 16,18 and 20, promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources.

Article 13. Public Education and Awareness

The Contracting Party shall:

(a) Promote and encourage understanding of the importance of and the measures required for the conservation of biological diversity, as well as its propagation through media, and the inclusion of these topics in educational programs; and

(b) Cooperates as appropriate, with other States and international organisations in developing educational and public awareness programs, with respect to conservation and sustainable use of biological diversity.

Article 14. Impact Assessment and Minimizing Adverse Impacts

1. Each Contracting Party, as far as possible and as appropriate, shall:

(a) Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoid or minimizing such effects and, where appropriate allow for public participation in such procedures;

(b) Introduce appropriate arrangements to ensure that the

environmental consequences of its programms and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account;

(c) Promote, on the basis of reciprocity notification, exchange of information and consultation on activities under their jurisdiction or control which are likely to significanctly affect adversely the biological diversity of other States or areas beyond the limits of national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements as appropriate;

(d) In the case of imminent or grave danger or damage, originating under its jurisdiction or control, to biological diversity within the area under jurisdiction of other States or in areas beyond the limits of national jurisdiction, notify immediately the potentially affected States of such danger or damage, as well as initiate action to prevent or minimize such danger or damage; and

(e) Promote national arrangements for emergency responses to activities or events, whether caused nuturally or otherwise, which present a grave and imminent danger to biological diversity and encourage international cooperation to supplement such national efforts and, where appropriate and agreed by the State or regional economic integration organisations concerned, to establish joint contingency plans.

2. The Conference of the Parties shall examine, on the basis of studies to be carried out, the issue of liability and redress, including restoration and compensation, for damage to biological diversity, except where such liability as a purely internal matter.

Article 15. Access to Genetic Resources

1. Recognizing the sovereign rights of Stagtes over their natural resources, the authority to determine to genetic resources rest with the national governments and is subjected to

national legislation.

2. Each Contracting Party shall endeavor to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention.

3. For the purpose of this Convention, the genetic resource being provided by a Contracting Party, as referred to in this Article and Article 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention.

4. Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article.

5. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.

6. Each Contracting Party shall endeavor to develop and carry out scientific research based on genetic resources provided by other Contracting parties with the full participation of, and where possible in, such Contracting Parties.

7. Each Contracting Party shall take legislative administrative or policy measures as appropriate, and in accordance with Article 16 and 19 and, where necessary through the financial mechanism established by Article 20 and 21 with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting party providing such resources. Such sharing shall be upon mutually agreed terms.

Article 16. Access to and Transfer of Technology

1. Each Contracting Party, recognizing that technology includes biotechnology, and that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of this Convention, under takes subject to the provisions of this Article to provide

and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.

2. Access to and transfer of technology referred to in paragraph 1 above to developing countries shall be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms where mutually agreed and where necessary, in accordance with the financial mechanism established by Article 20 and 21. In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraph 3,4 and 5 below.

3. Each Contracting party shall take legislative, administrative or policy measures, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources on mutually agreed terms including technology protected by patents and other intellectual property rights where necessary through the provision of Article 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below.

4. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilities access to, joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries and in this regard shall abide by the obligations included in paragraph 1,2 and 3 above.

5. The Contracting Party, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this

regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.

Article 17. Exchange of Information

1. The Contracting Parties shall facilitate the exchange of information, from all publicly available sources, relevant to the conservation and sustainable use of biological diversity, taking into account the special needs of developing countries.
2. Such exchange of information shall include exchange of results of technical, scientific and socio-economic research, as well as information on training and surveying programs, specialized knowledge, indigenous and traditional knowledge as such and in combination with the technologies referred to in Article 16, paragraph 1. It shall also, where feasible include repatriation of information.

Article 18. Technical and Scientific Cooperation

1. The Contracting Party shall promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity, where necessary, through the appropriate international and national institutions.
2. Each Contracting Party shall promote technical and scientific cooperation with other Contracting Parties, in particular developing countries in implementing this Convention, inter alia, through the development and implementation of national policies. In promoting such cooperation, special attention should be given to the development and strengtheining of national capabilities, by means of human resources development and institution building.
3. The Conference Parties shall, at its first meeting, shall determine how to establish a clearing-house mechanism to promote and facilitate technical and scientific cooperation.
4. The Contracting Parties shall, in accordance with national legislation and policies, encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in

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pursuance of the objectives of this Convention. For this purpose, the Contracting Parties shall also promote cooperation in the training of personnel and exchange of experts.

5. The Contracting Parties shall, subject to mutual agreement, promote the establishment of joint research programs and joint ventures for the development of technologies relevant to the objectives of this Convention.

Article 19. Handling of Biotechnology and Distribution of its Benefits

1. Each Contracting Party shall take legislative, administrative or policy measures as appropriate, to provide for the effective participation in biotechnological research activities by those Contracting Parties, especially developing countries, which provide the genetic resources for such research, and where feasible in such Contracting Parties.
2. Each Contracting Party shall take all practicable measures to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnology based upon genetic resources provided by the Contracting Parties. Such access shall be on mutually agreed terms.
3. The Parties shall consider the need for and modalities of a protocol setting out appropriate procedures, including in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.
4. Each Contracting Party shall, directly or by requiring any natural or legal person under its jurisdiction provide the organism referred to in paragraph 3 above, provide any available information about the use and safety regulations required by the Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned

to the Contracting Party into which those organisms are to be introduced.

Article 20. Financial Resources

1. Each Contracting Party undertakes to provide, in accordance with its capacities, financial support and incentives in respect of those national activities which are intended to achieve the objectives of this Convention, in accordance with its national plans, priorities and programs.
2. The developing country Parties shall provide new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfill the obligations of this Convention and to benefit from its provisions and which costs are agreed between a developing country Party and the institutional structure referred to in Article 21, in accordance with policy, strategy, programme priorities and eligibility criteria and an idicative list of incremental cost established by the Conference of the Parties. Other parties, including countries undergoing the process of transaction to a market economy, may voluntary assume the obligations of the developed country Parties. For the purpose of this Article, the Conference of the Parties, shall at its first meeting establish a list of developed country Parties and other Parties which voluntarily assume the obligations of the developed country Parties. The Conference of Parties shall periodically review and if necessary amend the list. Contributions from other countries and sources on a voluntary basis would also be encouraged. The implementation of these commitments shall take into account the need for adequacy, predictability and timely flow of funds and the importance of burden-sharing among the contributing Parties included in the list.
3. The developed country Parties may also provide, and developing country Parties avail themselves of, financial resources related to the implementation of this Convention through bilateral, regional and other multilateral channels.

4. The extent to which developing country Parties will effectively implement their commitments under this Convention will depend on the effective implementation by developed country Parties of their commitments under this Convention related to financial resources and social development and eradication of poverty are the first, overriding priorities of the developing country Parties.
5. The Parties shall take full account of the specific needs and special situation of least developed countries in their action with regard to funding and transfer of technology.
6. The Contracting Parties shall also take into consideration the special conditions resulting from the dependence on, distribution and location of, biological diversity within developing country Parties, in particular small island states.
7. Consideration shall also be given to special situation of developing countries, including those that are most environmentally vulnerable, such as those with arid and semi-arid zones, coastal and mountainous areas.

Article 21. Financial Mechanism

1. There shall be a mechanism for the provision of financial resources to developing country Parties for the purpose of this Convention on a grant or concessional basis the essential elements of which are described in this Article. The mechanism shall function under the authority and guidance of, and be accountable to, the Conference of the Parties for purpose of this Convention. The operations of the mechanism shall be carried out by such institutional structure as may be decided upon by the Conference of the Parties at its first meeting. For purposes of this Convention, the Conference of the parties shall determine the policy, strategy, programme priorities and eligibility criteria relating to the access to and utilization of such resources. The contributions shall be such, as to take into account the need for predictability, adequacy and timely flow of funds referred to in Article 20 in accordance with the amount of resources needed to be decided periodically by the

Conference of the Parties and the importance of burden-sharing among the contributing Parties included in the list referred to in Article 20, paragraph 2, Voluntary contributions may also be made by the developed country Parties and by othe countries and sources. The mechanism shall operate within a democratic and transparent system of governance.

2. Pertinent to the objectives of this Convention, the Conference of the Parties shall at its first meeting determine the policy, strategy and programme priorities, as well as detailed criteria and guidelines for eligibility for access to and utilization of the financial resources including monitoring and evaluation on a regular basis of such utilization. The Conference of the Parties shall decide on the arrangements to give effect to paragraph 1 above after consultation with the institutional structure entrusted with the operation of the financial mechanism.

3. The conference of the Parties shall review the effectiveness of the mechanism established under this Article, including the criteria and guidelines referred to in paragraph 2 above, not less than two years after the entry into force of this Convention and thereafter on a regula basis. Based on such review, it shall take appropriate action to improve the effectiveness of the mechanism if necessary.

4. The Contracting Parties shall consider strengthening existing financial institutions to provide financial resources for the conservation and sustainable use of biological diversity.

Article 22. Relationship with Other International Convertions

1. The provisions of this Convention shall not effect the rights and obligations of the Contracting Party deriving from any existing internationa agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity.

2. Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea.

Article 23. Conference of the Parties

1. A Conference of the Partiies is hereby established. The first meeting of the Conference of the Parties shall be convened by the Executive Director of the United Nations Environment Programme not later than one year after the entry into force of this Convention. thereafter, ordinary meetings of the Conference of the Parties shall be held at regular intervals to be determined by the Conference at the first meeting.
2. Extraordinary meetings of the Conference of the Parties shall be held at shall be held at such other times as may be deemed necessary by the Conference, or at the written request of any Party, provided that, within six months of the request being communicated to them by the Secretariat, it is supported by at least one third of the Parties.
3. The Conference of the Parties shall by consensus agree upon and adopt rules of procedure for itself and for any subsidiary body it may establish, as well as financial rules governing the funding of the Secretariat. At each ordinary meeting it shall adopt a budget for the financial period ungtil the next ordinary meeting.
4. The Conference of the Parties shall keep under review the implementation of this Convention, and for this purpose, shall:
   a) Establish the form and the intervals for transmitting the information to be submitted in accordance with Article 26 and consider such information as well as reports submitted by any subsidiary body;
   b) Review scientific technical and technological advice on biological diversity provided in accordance with Article 25;
   c) Consider and adopt, as required, protocols in accordance with Article 28;
   d) Consider and adopt, as required, in accordance with Article 29 and 30 amendments to this Convention and its annexes;
   e) Consider amendments to any protocol, as well as to any

annexes thereto, and, if so decided, recommended their adoption to the parties to the protocol concerned;

f) Consider and adopt, as required, in accordance with Article 30, additional annexes to this Convention;

g) Establish such subsidiary bodies, particularly to provide scientific and technical advice, as are deemed necessary for the implementation of this Convention;

h) Contact, through the Secretariat, the executive bodies of convention dealing with matters covered by this Convention with a view to establish appropriate forms of cooperation with them; and

i) Consider and undertake any additional action that may be required for the achievement of the purpose of this Convention in the light of experience gained in its operation.

5. The United Nations, its specialized agencies and International Atomic Energy Agency, as well as any State not party to this Convention, may be represented as observers at meetings of the Conference of the Parties. Any other body or agency, whether governmental or non-governmental, qualified in fields relating to continues and sustainable use of biological diversity, which has informed the Secretariat of its wish to be represented as an observer at meeting of the Conference of the Parties, may be admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rule of procedure adopted by the Conference of the Parties.

Article 24. Secretariat

1. A Secretariat is hereby established. Its functions shall be

(a) To arrange for and service meetings of the Conference of the Parties provided for in the Article 23.

(b) To perform the functions assigned to it by any protocol;

(c) To prepare reports on the executions of its functions under this Convention and present them to the Conference of the Parties;

(d) To coordinate with other relevant international bodies

and, in particular to enter into such administrative and contractual arragnements as may be required for the effective discharge of its functions; and

(e) To perform such othe functions as may be determined by the Conference of the Parties.

2. At its first ordinary meeting, the Conference of the Parties shall designate the secretariat from amongst those existing competent international organisations which have signified their willingness to carry out the secretariat functions under this Convention.

Article 25. Subsidiary Body on Scientific, Technical and Technological Advice

1. A subsidiary Body for the provision of Scientific, technical advice is hearby established to provide the Conference of the Parties and as appropriate, its other subsidiary bodies with timely advice relating to the implementation of this Convention. This body shall be open to participation by all Parties and shall be multifacilitatory. It shall comprise government representative competent in the relevant field of expertise. It shall report regularly to the Conference of the Parties on all aspects of its work.

2. Under the authority and in accordance with guidelines laid down by the Conference of the Parties, and upon its request, this body shall:

(a) Provide scientific and technical assessments of the status of biological diversity.

(b) Prepare scientific and technical assessment of the effects of types of measures taken in accordance with the provisions of this Convention.

(c) Identify innovative efficient and state-of-the-art technologies and know-how relating to the conservation and sustainable use of biological diversity and advice on the ways and means of promoting development and/or transferring such technologies.

(d) Provide advice on scientific programs and international cooperation in research and development related to

conservation and sustainable use of biological diversity; and

(e) Respond to scientific, technical, technological and methodological questions that the Conference of the Parties and its subsidiary bodies may put to the body.

3. The functions, terms of references, organization and operations of this body may be further elaborated by the Conference of the Parties.

Article 26. Reports

Each Contracting Party shall, at intervals to be determined by the Conference of the Parties, present to the Conference of the Parties, reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention.

Article 27. Settlement of Disputes

1. In the event of dispute between Contracting Parties concerning the interpretation or application of this Convention, the parties concerned shall seek solutions by negotiations.
2. If the parties concerned cannot reach agreement by negotiations, they may jointly seal the good offices of, or request mediation by, a third party.
3. When ratifying, accepting approving or acceding to this Convention, or at any time thereafter, a State or regional economic integration organization may declare inwriting to the Deposito ry that for a dispute not resoved in accordance with paragraph 1 or paragraph 2 above, it accepts one or both of the following means of dispute settlement as compulsory.
   (a) Arbitration in accordance with the procedure laid down in Part I of Annexure II;
   (b) Submission of the dispute to the International Court of Justice.
4. If the parties to the dispute have not, in accordance with paragraph 3 above, accept the same or any procedure, the dispute shall be submitted to conciliation in accordance with

Part 2 of Annexure II unless the parties otherwise agree.

5. The provisions of this Article shall apply with respect to any protocol except as otherwise provided in the protocol concerned.

Article 28. Adoption of Protocols.

1. The Contracting Parties shall cooperate in the formulation and adoption of protocols to this Convention.
2. Protocols shall be adopted at a meeting of the Conference of the Parties
3. The text of any proposed protocol shall be communicates to Contracting Parties by the Secretariat at least six months before such a meeting.

Article 29. Amendment of the Convention or Protocols

1. Amendments to this Convention may be proposed by any Contracting Parties. Amendments to any protocol may be prepared by any Party to that Protocol.
2. Amendments to this Convention shall be adopted at a meeting of the Conference of the Parties. Amendments to any protocol shall be adopted at a meeting of the Parties to the Protocol in question. The text of any proposed amendment to this Convention or to any protocol, except as many otherwise be provided in such protocol, shall be communicated to the Parties to the instrument in question by the Secretariat at least six months before the meeting at which it is proposed for adoption. The Secretariat shall also communicate proposed amendments to the signatories to this convention for information.
3. The parties shall make every effort to reach agreement on any proposed amendment to this Convention or to any protocol by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a two-third majority vote of the Parties to the instrument in question present and voting at the meeting, and shall submit by the Depository to all Parties for ratification, acceptance or approval.
4. Ratification, acceptance or approval of amendments shall be

notifies to the Depository in writing. Amendments adopted in accordance with paragraph 3 above shall enter into force among Parties having accepted them on the ninetieth day after the deposit of instruments of ratification, acceptance or approval by at least two third of Contracting Parties to this Convention or the parties to the Protocol concerned, except as may otherwise be provided in such protocol. Thereafter the amendments shall enter into force for any other party on the ninetieth day after the Party deposits its instrument of ratification, acceptance or approval of the amendments.

5. For the purpose of this Article, "Parties present and voting" means Parties present and casting an affirmative or negative vote.

Article 30. Adoption and Amendment of Annexes

1. The annexes to this Convention or to any protocol shall form an integral part of the Convention or of such protocol, as the case may be, and unless expressly provided otherwise, a reference to this Convention of its protocols constitutes at the same time a reference to any annexes thereto. Such annexes shall be restricted to procedural, scientific, technical and administrative matters.

2. Except as may be otherwise provided with respect t its annexes, the following procedures shall apply to the proposal, adoption and entry into force of additional annexes to this Convention or of annexes to any protocol :

   (a) Annexes to this Convention or to any protocol shall be proposed and adopted according to the procedures laid down in Article 29;

   (b) Any Party that is unable to approve an additional annex to this Convention or an annex to any protocol to which it is Party shall so notify the Depositary, in writing, within one year from the date of the communication of the adoption by the Depositary. The Depositary shall without delay notify all Parties of any such notification received. A party may at imes withdraw a previous declaration of objection and the annex shall thereupon

enter into force for the Party subject to subparagraph (c) below;

(c) On the expirty of one year from the date of the communication of the adoption by the Depository, the annex shall enter into force for all Parties to this Convention or to any protocol concerned which has not submitted a notification in accordance with the provisions of subparagraph (b) above.

3. The proposal, adoption and entry into force of amendment to annexure to this Convention or to any protocol shall be subject to the same procedure as for the proposal, adoption and entry into force of annexure to the Convention or annexes to any protocol.

4. If an additional annex or an amendment to annex is related to an amendment to this convention or to any protocol the additional annex or amendment to the Convention or to the protocol concerned enters into force.

Article 31. Right to Vote

1. Except as provided for in paragraph 2 below, each Contracting Party to this Convention or to any protocol shall have one vote.

2. Regional economic integration organisations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States which are Contracting Parties to this Convention or the relevant protocol. Such organisations shall not exercise their right to vote if their member States exercise theirs, and vice versa.

Article 32. Relationship Between this Convention and Its Protocols

1. A State or a regional economic integration organisation may not become a Party to a protocol unless it is, or becomes at the same time, a Contracting Party to this Convention.

2. Decisions under any protocol shall be taken only by the Parties to the protocol concerned. Any Contracting Party that has not ratified, accepted or approved a protocol may

participate as an observer in any meeting of the paties to that protocol.

Article 33. Signature

This Convention shall be open for signature at Rio de Janeiro by all States and any regional economic integration organisation from 5 June 1992 until 14 June 1992, and at the United Nations Headquarters in New York from 15th June 1992 to 4 June 1993.

Artile 34. Ratification, Acceptance or Approval

1. This Convention and any protocol shall be subject to ratification, acceptance or approval by State and by regional economic integration organisation Instruments of ratification, acceptance or approval shall be deposited with the Depository.
2. Any Organisation referred to in paragraph 1 above which becomes a Contracting Party to this Convention or any protocol without any of its member States being a Contracting Party shall be bounded by all the obligations under the Convention or the protocol, as the case may be. In the case of such organisations, one more of whose member States is a Contracting Party to this Convention or relevant protocol, the organisation and its member States shall decide on there respective responsibilities for the performance of their obligations under the Convention or protocol, as the case may be. In such cases, the organisation and the member States shall not be entitled to exercise rights under the Convention or relevant protocol concurrently.
3. In their instruments of ratification, acceptance or approval the organisations referred to in paragraph 1 above shall declare the extent of their competence with respect to the matters governed by the Convention or the relevant protocol. These organisations shall also inform the Depository of any relevant modification in the extent of their competence.

Article 35. Accession

1. This Convention and any protocol shall be open for accession by States and by regional economic integration organisations from the date on which the Convention or the protocol

concerned is closed for signature. The instruments of accession shall be deposited with the Depository.

2. In their instruments of accession, the organisations referred to in Paragraph 1 above shall declare the extent of their competence with respect to the matters governed by the Convention or the relevant protocol. These organisations shall also inform the Depository of any relevant modification in the extent of their competence.

3. The provisions of Article 34, paragraph 2, shall apply to regional economic integration organisations which accede in this convention or any protocol.

Article 36. Entry into Force

1. This Convention shall enter into force on the ninetieth day after the day of deposit of the thirtieth instrument of ratification, acceptance, approval or accession.

2. Any protocol shall enter into force on the ninetieth day after the day of deposit of the number of instruments of ratification, acceptance, approval or accession, specified in that protocol, has been deposited.

3. For each Contracting Party which ratifies, accepts or approves this Convention or accesses thereto after the deposit of the thirtieth instrument of ratification, acceptance, approval or accession, it shall enter into force on the ninetieth day after the date of deposit by such Contracting Party of its instrument of ratification, acceptance, approval or accession.

4. Any protocol, except for otherwise provided in such protocol shall enter into force for Contracting Party that ratifies, accepts or approves that protocol or accedes thereto after its entry into force pursuant to paragraph 2 above, on the ninietieth day after the date on which that Contracting Party deposits its instrument of ratification, acceptance, approval or accession, or on the date on which this Convention enters into force for that Contracting Party, whichever shall be the latter.

5. For the purposes of paragraphs of 1 and 2 above any instrument deposited by a regional economic integration,

organisations shall not be counted as additional to those deposited by member States of such organisation.

Article 37. Reservations

No reservations may be made to this Convention.

Article 38. Withdrawals

1. At anytime after two years from the date on which the Convention has entered into force for a Contracting Party, that Contracting Party, that Contracting Party may withdraw from the Convention by giving written notification to the Depository.
2. Any such withdrawal shall take place upon the expiry of one year after the date of its receipt by the Depositary, or on such later date as may be specified in the notification of the withdrawal.
3. Any Contracting Party which withdraws form this Convention shall be considered as also having withdrawn from any protocol to which it is party.

Article 39. Financial Interim Arrangements

Provided that it has been fully restructured in accordance with the requirments of Article 21, the Global Environment Facility of the United Nations Development Programmes, the United Nations Environment Programme and International Bank for Reconstruction and Development shall be the institutional structure referred to in Article 21 on an interim basis, for the period between the entry into force of this Convention and the first meeting of the Conference of the Parties or until the Conference of the Parties decides which institutional structure will be designated in accordance with Article 21.

Article 40. Secretariat Interim Arrangements

The secretariat to be provided by the Executive Director of the United Nations Environment Programme shall be the secretariat referred to in Article 24, paragraph 2, on an interim basis for the period between the entry into force on this Convention and the first meeting of the Conference of the Parties.

Article 41. Depository

The Secretary - General of the United Nations shall assume the functions of Depository of this Convention and any protocols.

Article 42. Authentic Texts

The original of this .Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts and equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorised to that effect, have signed in this Convention.

Done at Rio de Janeiro on this fifth day of June, one thousand nine hundred and ninety-two.

Annex I

Identification and Monitoring

1. Ecosystem and habitats; containing high diversity, large numbers of endemic or threatened species, or wilderness; required by migratory species; of some social economic, cultural or scientific importance; or which are representative, unique or associated with key evolutionary or other biological process;
2. Species and communities which are ; threatened; wild relatives of domesticated or cultivated species; of medicinal, agricultural or other economic value; or social, scientific or cultural importance; or importance for research into the conservation and sustainable use of biological diversity, such as indicator species; and
3. Described genomes and gene of social, scientific or economic importance

Annex II

Part I

Arbitration

Article 1

The claimant party shall notify that secretariat that the parties are referring a dispute to arbitration pursuant to

Article 27. The notification shall state the subject matter of arbitration and include, in particular, the Artciles of the Convention of the protocol, the interpretation or application of which are at issue. If the parties do not agree on the subject matter of the dispute before the President of the tribunal is designated, the arbitrate tribunal shall determine the subject matter. The secretariat shall forward the information thus recieved to all Contracting Parties to this Convention or the protocol concerned.

Article 2

1. In disputes between two parties, the arbitral tribunal shall consist of three members. Each of the parties to the dispute shall appoint designate by common agreement the third arbitrator who shall be the President of the tribunal. The latter shall not be national of one of the parties to the dispute, nor have his or her usual place of residence in the territory of one of these parties, nor be employed by any of them, nor have dealt with the case in any other capacity.
2. In disputes between more than two parties, parties in the same interest shall appoint one arbitrator jointly by agreement.
3. Any vacancy shall be filled in the manner prescribed for the initial appointment.

Article 3

1. If the President of the arbitral tribunal has not been designated within two months of the appointment of the second arbitrator, the Secretary-General of the United Nations shall, at the request of a party, designate the President within a furhter two-month period.
2. If one of the parties to the dispute does not appoint an arbitrator with/in two months or the receipt of the request, the other party may inform the Secretary-General who shall make the designation within a further two month period.

Article 4

The arbitral tribunal shall render its decisions in accordance

with the provisions of this Convention, any protocols concern and international law.

Article 5

Unless the parties to the dispute otherwise agree, the arbit tribunal shall determine its own rules of procedure.

Article 6

The arbitral tribunal may, at the request of one of the parti recommend essential interim measures of protection.

Article 7

The parties to the dispute shall facilitate the work of th arbitral tribunal and, in particular using all means at thei disposal, shall;

(a) Provide with all relevant documents, information and facilities; and

(b) Enable it, when necessary, to call it witnesses or experts and receive their evidence

Article 8

The parties and the arbitrators are under an obligation to protect the confidentiality of any information they receive in confidence during the proceedings of the arbitral tribunal.

Article 9

Unless the arbitral tribunal determines otherwise because of the particular circumstances of the case, the costs of the tribunal shall be borne by the parties to the dispute in equal shares. The tribunal shall keep a record of all its costs and shall furnish a final statement thereof to the parties.

Article 10

Any Contracting Party that has an interest of a legal nature in the subject matter of the dispute which may be affected by the decision in the case, may intervene in the proceedings with the consent of the tribunal.

Article 11

The tribunal may hear and determine counterclaims arising directly out of the subject matter of the dispute.

Article 12

Decisions both on procedure and substance of the arbitral tribunal shall be taken by a majority vote of its members.

Article 13

If one of the parties to the dispute does not appear before the arbitral tribunal or fails to defend to its case, the other party may request the tribunal to continue the proceedings and to make its award. Absence of a party or a failure of a party to defend its case shall not constitute a bar to the proceedings. Before rendering its final decision the arbitral tribunal must satisfy itself that the claim is well founded in fact and law.

Article 14

The tribunal shall render its final decision within five months of the date on which is is fully constitutes unless if finds it necessary to extend the time limit for a period which should not exceed five more months.

Article 15

The final decision of the arbitral tribunal shall be confined to the subject matter of the dispute and shall state the reason on which it is based. It shall contain the names of the members who have participated and the date, of the final decision. Any member of the tribunal may attach a Separate or dissenting opinion to the final decision.

Article 16

The award shall be binding on the parties to the dispute. It shall be without appeal unless the parties to the dispute have agreed in advance to an appellate procedure.

Article 17

Any controversy which may arise between the Parties to the disputes as regards the interpretation or matter of implementation of the final decision may be submitted by either party for decision to the arbitral tribunal which rendered it.

Part II

Conciliation

Article 1

A conciliation commission shall be created upon the request of one of the parties to the dispute. The commission shall, unless the parties otherwise agree, be composed of five members, two appointed by each parties concerned and a President chosen jointly by those members.

Article 2

In disputes between more than two parties, parties in the same interest shall appoint their members of the commission jointly by agreement. Where two or more parties have separate interest or there is a disagreement as to whether they are of the same interest, they shall appoint there members separately.

Article 3

If any appointments by the parties are not made within two months of the date of the request to create a conciliation commission, the Secretary-General of the United Nations, shall if asked to do so by the party that made the request,make those appointment within a further two month period.

Article 4

If a President of the conciliation commission has not been chosen within two months of the list of the members of the commission being appointed, the Secretary-General of the United Nations shall, if asked to do so by a party designate a President within a further two month period.

Article 5

The conciliation commission shall take its decision by majority vote of its members. It shall, unless the parties to the dispute otherwise agree, determine its own procedure. It shall render a proposal for resolution of the dispute, which the parties shall consider in good faith.

Article 6

A disagreement as to whether the conciliation commission has competence shall be decided by the commission.

STATEMENT OF PRINCIPLES OF FORESTRY

ADOPTION OF AGREEMENTS ON ENVIRONMENT AND DEVELOPMENT

Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests.

PREAMBLE

a. The subject of forests is related to the entire range of environmental and development issues and opportunities, including the right to socio-economic development on a sustainable basis.

b. The guiding objective of these principles is to contribute to the management, conservation and sustainable development of forests and to provide for their multiple and complementary functions and uses.

c. Forestry issues and opportunities should be examined in a holistic and balanced manner within the overall context of environment and development, taking into consideration the multiple functions and uses of forests, including tradtional uses, and the likely economic and social stress when the uses are constrained or restricted, as well as the potential for development that sustainable forest management can offer.

d. These principles reflect a first global consensus on forests. In committing themselves to the prompt implementation of these principles, countries also decide to keep them under assessment for their adequacy with regard to further international cooperation of forest issues.

e. These principles should apply to all types of forests, both natural and planted, in all geographic regions and climatic zones, including austral, boreal, subtemperate, temperate, subtropical and tropical.

f. All types of forests embody complex and unique ecological processes which arte the basis for their present and potential capacity to provide resources to satisfy human needs as well as environmental values and as such their sound management and conservatio is of concern to the Governments of the countries to which they belong and are of value to local communities and to the environment as a whole.

g. Forests are essential to economic development and the maintenance of all forms of life.

h. Recognizing that the responsiblity for forest management, conservation and sustainable development in many States allocated among federal/national, state/provincial and local levels of government, each State, in accordance with its constitution and/or national legislation should pursue these principles at the appropriate level of government.

PRINCIPLES/ELEMENTS

1a. States have, in accordance with the Charter of the United Natic.. and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies and have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

b. The agreed full incremental cost of achieving benefits associated with forest conservation and sustainable development requires increased international cooperation and should be equitably shared by the international community.

2a. States have the sovereign and inalienable right to utilize, manage and develop their forests in accordance with their development needs and level of socio-economic development and on the basis of national policies consistent with sustainable development and legislation, including the conversion of such areas for other uses within the overall socio-economic development plan and based on rational

land-use policies.

b. Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual human needs of present and future generations. These needs are for forests products and services, such as wood and wood products, water, food, fodder, medicine, fuel, shelter, employment, recreation, habitats for wildlife, landscape diversity, carbon sinks and reservoirs, and for other products. Appropriate measures should be taken to protect forests against harmful effects of pollution, including air-borne pollution, fires, pests and diseases in order to maintain their full multiple value.

c. The provision of timely, reliable and accurate inforamtion on forests and forest ecosystems is essential for public understanding and informed decision-making and should be ensured.

d. Governments should promote and provide opportunities for the participation of intrested parties, including local communities and indigeneous people, industries, labour, non-governmental organizations and individuals, forest dwellers and women, in the development, implementation and planning of national forest lands.

3a. National policies and strategies should provide a framework for increased efforts including the development and strengthening of instutions and programmes for the management, conservation and sustainable development of forests and forest lands.

b. International instutional arrangements, building on those organizations and mechanisms already in existence, as appropriate, should facilitate international cooperation in the field of forests.

c. All aspects of environmental protection and social and economic development as they relate to forests and forest lands should be integrated and comprehensive.

4. The vital role of all types of forests in maintaining the ecological processes and balance at the local, national, regional and global levels through, inter alia, their role in

protecting fragile ecosystems, watersheds and freshwater resources and as rich storehouse of biodiversity and biological resources and sources of genetic material for biotechnology products, as well as photosynthesis, should be recognised.

5a. National forest policies should recognize and duly support the identity, culture and the rights of indigenous people, their communities and other communities and forest dwellers. Appropriate conditions should be promoted for these groups to enable them to have an economic stake in forest use, perform economic activities,and achieve and maintain cultural identity and social organization, as well as adequate levels of livelihood and well- being, through, inter alia, those land tenure arrangements which serve as incentives for the sustainable management of forests.

b. The full participation of women in all aspects of the management, conservation and sustainable development of forests should be actively promoted.

6a. All types of forests play an important role in meeting energy requirements through the provision of a renewable source of bio-energy, particularly in developing countries, and the demands for fuelwood for household and industrial needs should be met through sustainable forest management, afforestation and reforestation. To this end, the potential contribution of planatations of both indigeneous and introduced species for the provision of both fuel and industrial wood should be recognized.

b. National policies and programmes should take into account the relationship, where it exists, between the conservation, management and sustainable development of forests and all aspects related to the production, consumption, recycling and/or final disposal of forests products.

c: Decisions taken on the management, conservation and sustainable development of forest resources should benefit, to the extent practicable, from a comprehensive assessment of ecnomic and non-economic values of forest goods and services and of the environmental costs and benefits. The

development and improvement of methodologies for such evaluation should be promoted.

d. The role of planted forests and permanent agricultural crops as sustainable and environmentally sound sources of renewable energy andf industrial raw material should be recognized, enhanced and promoted. Their contribution to the maintenance of ecological processes, to offsetting pressure on primary/old- growth forest and to providing regional employment and development with the adequate involvement of local inhabitants should be recognized and enhanced.

e. Natural forests also constitute a source of goods and services and their conservation, sustainable management and use should be promoted.

7a. Forests should be made to promote a supportive international economic climate conductive to sustained and environmentally sound development of forests in all countries, which include, inter alia, the promotion of sustainable patterns of production and consumption, the eradication of poverty and the promotion of food security.

b. Specific financial resources should be provided to devleoping countries with significant forest areas which establish programmes for the conservation of forests including protected natural forest areas. These resources should be directed notably to economic sectors which would stimulate economic and social substitution activities.

8a. Efforts should be undertaken towards the greening of the world. All countries, notably developed countries, should take positive and transparent action towards reforestation, afforestation and forest conservation, as appropriate.

b. Efforts to maintain and increase forest cover and forest productivity should be undertaken in ecologically, economically and socially sound ways through the rehabitation, reforestation and re-establishment of trees and forests on unproductive, degraded and deforested lands, as well as through the management of existing forest resources.

c. The implementation of national policies and programmes

aimed at forest management, conservation and sustainable development, particularly in developing countries, should be supported by international financial and technical cooperative, including through the private sector, where appropriate.

d. Sustainable forest management and use should be carried out in accordance with national development policies and priorities and on the basis of environmentally sound national guidelines. In the formulation of such guideliness, accounts should be taken, as appropriate and if applicable, of relevant internationally agreed methodologies and criteria.

e. Forest management should be integrated with management of adjacent areas so as to maintain ecological balance and sustainable productivity.

f. National policies and/or legislation aimed at management, conservation and sustainable development of forests should include the protection of ecologically viable representative or unique examples of forests, including primary/old growth forests, cultural, spiritual, historical, religious and other unique and valued forests of national importance.

g. Access to biological resources, including genetic material, shall be with due regard to the sovereign rights of the countries where the forests are located and to the sharing on mutually agreed terms of technology and profits from biotechnology products that are derived from these resources.

h. National policies should ensure that environmental impact assessments should be carried out where actions are likely to have significant adverse impacts on important forest resources, and where such actions are subject to a decision of a competent national authority.

9a. The efforts of developing countries to strengthen the management, conservation and sustainable development of their forest resources should be supported by the international community, taking into account the importance of redressing international community, taking into account the importance of redressing external indebtedness,

particularly where aggravated by the net transfer of resources to developed countries, as well as the problem of achieving at least the replacement value of forests through improved market access for forest products, especially processed products. In this respect, special attention should also be given to the countries undergoing the process of transition to market economies.

b. The problem that hinder efforts to attain the conservation and sustainable use of forest resources and that stem from the lack of alternative options available to local communities, in particular the urban poor and poor rural populations who are economically and socially dependent on forests and forest resources, should be addressed by Governments and the international community.

c. National policy formulation with respect to all types of forests should take account of the pressures and demands imposed on forest ecosystems and resources from influencing factors outside the forest sector, and interesectoral means of dealing with these pressures and demands should be sought.

10. New and additional financial resources should be provided to developing countries to enable them to sustainably manage, conserve and develop their forest resources, including through afforestation, reforestation and combating deforestation and forest and land degradation.

11. In order to enable, in particular, developing countries to enhance their endogenous capacity and to better manage, conserve and develop their forest resources, the access to and transfer of environmentally sound technologies and corresponding knowhow on favourably terms, including on concessional and preferential terms as mutually agreed, in accordance with the relevant provisions of Agenda 21, should be promoted, facilitated and financed, as appropriate.

12a. Scientific research, forest inventories for assessments carried out by national institutions which take into account, where relevant biological, physical, social and economic variables, as well as technological development and its application in

the field of sustainable forest management, conservation and development, should be strengthened through effective modalities, including international cooperation. In this context, attention should also be given to research and development of sustainably harvested non-wood products.

b. National and, where appropriate, regional and international institutional capabilities in education, training, science, technology, economics, anthropology and social aspects of forests and forest management are essential to the conservation and sustainable development of forests and should be strengthened.

c. International exchange of information on the results of forest management research and development should be enhanced and broadened, as appropriate, making full use of education and training institutions, including those in the private sector.

d. Appropriate indigenous capacity and local knowledge regarding the conservation and sustainable development of forests should, through institutional and financial support, and in collaboration with the people in local communities concerned, be recognized, respected, recorded, developed and, as appropriate, introduced in the implementation of programmes. Benefits arising from the utilization of indigenous knowledge should, therefore, be equatably shared with such people.

13a. Trade in forest products should be based on non-discriminatory and multilaterally agreed rules and procedures consistent with international trade law and practices. In this context, open and free international trade in forest products should be facilitated.

b. Reduction or removal of tariff barriers and impediments to the provision of better market access and better prices for higher value-added forest products and their local processing should be encouraged to enable producer countries to better conserve and manage their renewable forest resources.

c. Incorporation of environmental costs and benefits into

market forces and mechanisms, in order to achieve forest conservation and sustainable development, should be encouraged both domestically and internationally.

d. Forest conservation and sustainable development policies should be integrated with economic, trade and other relevant policies.

e. Fiscal, trade, industrial, transportation and other policies and practies that they may lead to forest degradation should be avoided. Adequate policies, aimed at management, conservation and sustainable development of forests, including where appropriate, incentives, should be envisaged.

14. Unilateral measures, incompatible with international obligations or agreements, to restrict and/or ban international trade in timber or other forest products should be removed or avoided, in order to attain long-term sustainable forest management.

15. Pollutants, particularly air-borne pollutants, including those responsible for acidic deposition, that are harmful to the health of forest ecosystems at the local, national, regional and global levels should be controlled.

CONSERVATION OF BIOLOGICAL DIVERSITY (* Chapter 15 of the Agenda 21)

BACKGROUND

15.1. The objectives and activities in this chapter of Agenda 21 are intended to improve the conservation of biological diversity and the sustainable use of biological resources, as well as to support the Convention on Biological Diversity.

INTRODUCTION

15.2. Our planet's essential goods and services depend on the variety and variability of genes, species, populations and ecosystems. Biological resources feed and cloth us and provide housing, medicines and spiritual nourishment. The natural ecosystems of forests, savannahs, pastures and rangelands, deserts, tundras, rivers, lakes, and seas contain most of the Earth's biodiversity. Farmers' fields and gardens are also of great importance as repositories, while gene banks, botanical gardens, zoos and other germplasm repositories make a small but significant contributions. The current decline in biodiversity is largely the result of human activity and represents a serious threat to human development.

PROGRAMME AREA

Conservation of biological diversity

Basis for action

15.3 Despite mounting efforts over the past 20 years, the loss of the world's bilogical diversity, mainly from habitat destruction, over-harvesting, pollution and the inappropriate introduction of foriegn plants and animals, has continued for yielding sustainable benefits. Urgent and decisive action is needed to conserve and maintain genes, species and ecosystems, with a view to the sustainable management and use of biological resources. Capacities

for the assessment, study and systematic observation and evaluation of biodiversity need to be reinforced as national and international levels. Effective national action and international cooperation is required for the in situ protection of ecosystems, for the ex situ conservation of biological and genetic resources and for the enhancement of ecosystem fucntions. The participation and support of local communities are elements essential to success of such an approach. Recent advances in biotechnology have pointed up the likely potential for agriculture, health and welfare and for the environmental purpose of the gentic material contained in plants, animals and micro- organisms. At the same time, it is particularly important on this context to stress that States have the sovereign right to exploit their own biological resources pursuant to their environmental policies, as well as the responsiblity to conserve their biodiversity and use their biological resources sustainably, and to ensure that activities within their jurisdiction or control do not cause damage to the biological diversity of other States or of areas beyond the limits of national jurisdiction.

Objectives

15.4 Governments at the appropriate level, with the cooperation of the relevant United Nations and regional, intergovernmental and non-governmental organization indigeneous people and their communities, as well as social and economic factors, should :

(a) Press for the early entry into force of the Convention of Biological Diversity, with the widest possible participation;

(b) Develop national strategies for the fair and equitable sharing of benefits derived from research and development and use of biological and genetic resources, including biotechnology, between the sources of those resources and those who use them;

(c) Integrate strategies for the conservation of biological diversity and the sustainable use of biologicalresources into national development strategies and / or plans;

(d) Take appropriate measures for the fair and equitable

sharing of benefits derived from research and development and use of biolgical and genetic resources, including biotechnology, between the sources of those resources and those who use them;

(e) Carry out country studies, as appropriate , on the conversion of biological diversity and the sustainable use of biological resources, including analyses of relevant costs and benefits, with particular reference to socio-economic aspects;

(f) Produce regularly updated world reports on biodiversity based upon national assessments;

(g) Recognize and foster the traditional methods and the knowledge of indigeneous people and their communities, emphasizing the particular role of women, relevant to the conservstion of biological diversity and the sustainable use of biological resources, and ensure the opportunity of the participation of those groups in the economic and commercial benefits derived from the use of such traditional methods and knowledge;

(h) Implement mechanisms for the improvement, generation, development and sustainable use of biotechnology and its safe transfer, particularly to developing countries, taking account the potential contribution of biotechnology to the conservation of biological diversity and the sustainable use of biological resources;

(i) Promote broader international and regional cooperation in furthering scientific and economic understanding of the importance of biodiversity and its functions in ecosystems:

(j) Develop measures and arrangements to implement the rights of countries or origin of genetic resource or countries providing genetic resources, as defined in the Convention on Biological Diversity, particularly developing countries, to benefit from the products derived from such resources.

:8/{Article 2(Use of terms) of the convention on Biological

Diversity includes the following definitions:

Country of origin of genetic resources' means the country which possess those genetic resources in in-situ conditions.

Country providing genetic resources' means the country supplying genetic resources collected from in-situ sources, including population of both wild and domesticated species, or taken from ex-situ sources, which may or may not have originated in that country.

Activities

Management related activities

15.5 Government at the appropriate levels, consistent with national policies and practices with the cooperation of the relevant United Nations bodies and as appropriate, intergovernmental organizations and with the support of indigeneous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate :

(a) Develop new or strengthen existing strategies, plans or programmes of action for the conservation of biological diversity and the sustainable use of biological resources, taking account of education and training needs;

(b) Intergrate strategies for the conservation of biological diversity and the sustainable use of biological and genetic resources into relevant sectoral or cross- sectoral plans, programmes and policies, with particular reference to the special importance of terrestrial and aquatic biological and genetic resources for food and agriculture;

(c) Undertake country studies or use methods to identify components of biological resources, ascribe values to biological and genetic resources, identify processes and activities with significant impacts upon biological diversity, evaluate the potential economic implications of the conservation of biological diversity and the sustainable use of biological and gentic resources, and

suggest priority actions;

(d) Take effective economic, social and other appropriate incentive measures to encourage the conservation of biological diversity and the sustainable use of biological reosurces, including the promotion of sustainable production systems, such as traditional methods of agriculture, agroforestry, forestry, range and wildlife management, which use, maintain of increase biodiversity;

(e) Subject to national legislation, take action to respect, record, protect and promote the wider application of the knowledge, innovation and practices of indigeneous and local communities embodying traditional life styles for the conservation of biological diversity and the sustainable use of biological resources, with a view to the fair and equitable sharing of the benefits arising, and promote mechanisms to involve those communities, including women, in the conservation and management of ecosystems;

(f) Undertake long-term research into the importance of biodiversity for the functioning of ecosystems and the role of ecosystems in producing goods, environmental services and other values supporting sustainable development, with particular reference to the biology and reproductive capacities of key terrestrail and aquatic species, including native, cultivated and cultured species; new observation and inventory techniques; ecological conditions necessary for biodiversity and conservation and continued evolution; and social behaviour and nutrition habits dependent on antural ecosystems, where women play key roles. The work should be undertaken with the widest possible participation, especially of indigeneous people and their communities, including women;

(g) Take action where necessary for the conservation of biological diversity through the in situ conservation of ecosystems and nautral habitats, as well as primitive

cultivars and their wild relatives, and the maintenance and recovery of viable populations of species in their natural surroundings, and implement ex situ measures, preferably in the source country. in situ measures should include the reinforcement of terrestrial, marine and aquatic protected area systems and embrace, inter alia, vulnerable freshwater and other wet lands and coastal ecosystems, such as estuaries, coral reefs and mangroves :

(h) Promote the rehabilitation and restoration of damages ecosystems and the recovery of threatened and endangered species;

(i) Develop policies to encourage the conservation of biodiversity and the sustainable use of biological and genetic resources on private lands.

(j) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;

(k) Introduce appropriate environmental impact assessment procedures for proposed likely to have significant impacts upon biodiversity, providing for suitable information to be made widely available and for public participation, where appropriate, and encourage the assessment of the impacts of relevant policies and programmes on biological diversity;

(l) Promote, where appropriate, the establishment and strengthening of national inventory regulation or management and control systems related to biological resources, at the appropriate level;

(m) Take measures to encourage a greater understanding and appreciation of the value of biological diversity, as manifested both in its component parts and in the ecosystem services provided.

Data and information

15.6 Governments at the appropriate level, consistent with national policies, and practices with the cooperation of the relevant

United Nation bodies and, as appropriate, intergovernmental organizations and with the support of indigeneous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consent with the requirements of international law, should as appropriate :

(a) Regularly collate, evaluate and exchange information on the conservation of biological diversity and the sustainable use of biological resources;

(b) Develop methodologies with a view to undertaking systematic sampling and evaluation on a national basis of the components of biological diversity identified by means of country studies;

(c) Initiate or further develop methodologies and begin or continue work on surveys at the appropriate level on the status of ecosystems and establish baseline information on biological and genetic resources, including those in terrestrial, aquatic, coastal and marine ecosystems, as well as inventories undertaken with the participation of local and indigenous people and their communities;

(d) Identify and evaluate the potential economic and social implications and benefits of the conservation and sustainable use of terrestrial and aquatic species in each country, building upon the results of country studies;

(e) Undertake the updating, analysis and interpretation of data derived from the identification, sampling and evaluation activities described above;

(f) Collect, assess the make available relevant and reliable information in a timely manner and in a form suitable for decision-making at all levels, with the full support and participation of local and indigeneous people and their communities.

(c) International and regional cooperation and coordination

15.7 Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmetnal organizations, and with the

support of indigeneous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate :

(a) Consider the establishment of strengthening of national or international capabilities and network for the exchange of data and information of relevance to the conservation of biological diversity and the sustainable use of biological and genetic resources;

(b) Produce regularly updated world reports on biodiversity based upon national assessments in all countries;

(c) Promote technical and scientific cooperation in the field of conservation of biological diversity and the sustainable use of biological and genetic resources. Special attention should be given to the development and strengthening of nataional capabiliites by means of human resource development and institution-building, including the transfer of technology and/or development of research and management facilities, such as herabaria, museums, gene banks, and laboratories, related to the conservation of biodiversity;

(d) Without prejudice to the relevant provisions of the convention on siological diversity, facilitate for this chapter the transfer of technologies relevant to the conservation of biological diversity and the sustainable use of biological resources or technologies that make use of genetic resources and cause no significant damage to the environment, in conformity with chapter 34, and recognizing that technology include biotechnology;

(e) Promote cooperation between the parties to relevant international conventions and action plans with the aim of strengthening and coordinating efforts to conserve biological resources;

(f) Strengthen a support for international and regional instruments, programmes and action plans concerned with the conservation of biological diversity and the

sustainable use of biological resources;

(g) Promote improved international coordination of measu res for the effective conservation and management of endangered/non-pest megratory species, including app ropriate levels of support for the establishment and managment of protected areas in transboundary locations;

(h) Promote national efforts with respect to surveys, data collection, sampling and evaluation, and the maintenance of gene banks.

Means of implementation

(a) Financing and cost evaluation

15.8 The Conference secretariat has estimated the average total cost (1993 -2000) of implementing the activities of this chapter to be about $3.5 billion, including about $1.75 billion from the international community on grant or concessional terms. These are indicative and order of magnitude estimates only and have not reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

(b) Scientific and technological means

15.9 Specific aspects to be addressed include the need to develop :

(a) Efficient methodologies for baseline surveys and inventories, as well as for the systematic sampling and evaluation of biological resources;

(b) Methods and technologies for the conservation of biological diversity and the sustainable use of biological resources ;

(c) Improved and diversified methods for ex situ conservation with a view to the long term conservation of genetic resources of importance for research and development.

C. Human resource development

15.10 There is a need, where appropriate to :

a. Increase the number and/or make more efficient use of

trained personnel in scientific and technological fields relevant to the conservation of biological diversity and the sustainable use of biological resources ;

b. Maintain or establish programmes for scientific and technical education and training of managers and professionals, especially in developing countries, on measures for the identification, conservation of biological diversity and the sustainable use of biological resources at all policy-making levels in Government, business enterprises and lending institutions, and promote and encourage the inclusion of these topics in educational programmes.

D. Capacity-building

15.11 There is a need, where appropriate , to :

a. Strengthen existing institutions and/or establish new ones responsible for the conservation of biological diversity and to consider the development of mechanisms such as national biodiversity institutes or centres;

b. Continue to build capacity for the conservation of biological diversity and the sustainable use of biological resources in all relevant sectors;

c. Build capacity, especially within Governments, business enterprises and bilateral and multilateral development agencies, for integrating biodiversity concerns, potential benefits and opportunity cost calculations into project design, implementation and evaluation processes, as well as for evaluating the impact on biological diversity of proposed development projects;

d. Enhance the capacity of governmental and private institutions, at the appropriate level, responsible for protected area planning and management to undertake intersectoral coordination and planning with other governmental institutions, non-governmental organizations and, where appropriate, indigeneous people and their communities.

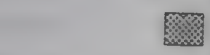
RECOGNIZING AND STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES:

Indigenous people and their communities have an historical relationship with their lands and are generally descendants of the original inhabitants of such lands. In the context of this chapter the term "lands" is understood to include the environment of the areas which the people concerned traditionally occupy.

Government should aim at fulfilling the following objectives:-

Recognition that the lands of indigenous people and their communities would be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate. Recognition that traditional and direct dependence on renewable resources and ecosystems, including sustainable harvesting, continues to be essential to the cultural, economic and physical well being of indigenous people and their communities.

Some indigenous people and their communities may require, in accordance with national legislation, greater control over their lands, self-management of their resources, participation in development decisions affecting them, including, where appropriate participation in the establishment or management of Protected areas. The following are some of the specific measures which Governments could take: Adopt or strengthen appropriate policies and or legal instruments that will protect indigenous intellectual and cultural property and the right to preserve customary and administrative systems and practices



— AGENDA - 21

MULTILATERAL TRADE NEGOTIATIONS THE URGUAY ROUND

Trade Negotiations Committee

Excerpts from

FINAL ACT EMBODYING THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS

Marrakesh, 15 April 1994

SECTION 5: PATENTS

Article 27
Patentable Subject Matter

1. Subject to the Provisions of paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields to technology, provided that they are new, involve an inventive step and are capable of industrial application.5 Subject to paragraph 4 of Article 65, paragraph 8 of Articles 70 and paragraph 3 of this Article, patents sall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.

2. Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect orde public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.

3. Members may also exclude from patentability:

(a) Diagnostic, therapeutic and surgical methods for the treatment of humans or animals;

(b) Plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protectin of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.

Article 28
Rights Conferred

1. A patent shall confer on its owner the following exclusive rights:

(a) Where the subject matter of a patent is a product, to prevent third parties not having the owner's consent from the acts of: making, using, offering for sale, selling, or importing6 for these purposes that product;

(b) Where the subject matter of a patent is a process, to prevent third parties not having the owner's consent from the act of using the process, and from the acts of: using, offering for sale, selling, or importing for these purposes at least the product obtained directly by that process.

2. Patent owners shall also have the right to assign, or transfer by succession, the patent and to conclude licensing contracts.

Article 29

Conditions on Patent Applicants

1. Members shall require that an applicant for a patent shall disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art and may require the applicant to indicate the best mode for carrying out the invention known to the inventor at the filing date or, where priority is claimed, at the priority date of the application.

2. Members may require an applicant for a patent to provide information concerning the applicant's corresponding foreign applications and grants.

Article 30

Exceptions to Rights Conferred

Members may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.

Article 31

Other Use Without Authorization of the Right Holder

Where the law of a Member allows for other use of the subject matter of a patent without the authorization of the right holder, including use by the government or third parties authorized by the government, the following provisions shall be respected.

(a) authorization of such use shall be considered on its individual merits:

(b) such use may only be permitted if prior to such use, the proposed user has made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period of time. This requirement may be waived by a Member in the case of a national emergency or other circumstances of extreme urgency or in cases of public non-commercial use. In the case of public non-commercial use, where the government or contractor, without making a patent search, knows or has demonstrable grounds to know that a valid patent is or will be used by or for the government, the right holder shall be informed promptly;

(c) the scope and duration of such use shall be limited to the purpose for which it was authorized, and in the case of semi- conductor technology shall only be for public non-commercial use or to remedy a practice determined after judicial or administrative process to be anit-competitive;

(d) such use shall be non-exclusive;

(e) such use shall be non-assignable, except with that part of the enterprise or goodwill which enjoys such use;

(f) any such use shall be authorized predominantly for the supply of the domestic market of the Member authorizing such use;

(g) authorization for such use shall be liable, subject to adequate protection of the legitimate interests of the persons so authorized, to be terminated if and when the circumstances which led to it cease to exit and are unlikely to recur. The Competent authority shall have the authority to review, upon motivated request, the continued existence of these circumstances;

(h) the right holder shall be paid adequate remuneration in the circumstances of each case, taking into account the economic value of the authorization;

(i) the legal validity of any decision relating to the autorization of such use shall be subject to judical review or other independent review by a distinct higher authority in that member;

(j) any decision relating to the remuneration provided in respect of such use shall be subject to judicial review or other independent review by a distinct higher authority in that Member;

(k) Members are not obliged to apply the conditions set forth in subparagraphs (b) and (f) where such use is permitted to remedy a practice determined after judicial or administrative process to be anti-competitive. The need to correct anti-competitive practices may be taken into account in determining the amount of remuneration in such cases. Competent authorities shall have the authority to refuse termination of authorization if and when the conditions which led to such authorization are likely to recur;

(l) where such use is authorized to permit the exploitation of a patent ("the second patent") which cannot be exploited without infringing another patent ("the first patent"), the following additional conditions shall apply:

(i) the invention claimed in the second patent shall involve an important technical advance of considerable economic significance in relation to the invention claimed in the first patent;

(ii) the owner of the first patent shall be entitled to a cross-licence on reasonable terms to use the invention claimed in the second patent; and

(iii) the use authorized in respect of the first patent shall be non-assignable except with the assignment of the second patent.

Article 32

Revocation/Forfeiture

An opportunity for judicial review of any decision to revoke or forfeit a patent shall be available.

Article 33

Term of Protection

The term of protection available shall not end before the expiration of a period of twenty years counted from the filing date.8

Article 34

Process Patents: Burden of Proof

1. For the purposes of civil proceedings in respect of the infringement of the rights of the owner referred to in paragraph 1(b) of Article 28, if the subject matter of a patent is a process for obtaining a product, the judicial authorities shall have authority to order the defendant to prove that the process to obtain an identical product is different from the patented process. Therefore, Members shall provide, in at least one of the following circumstances, that any identical product when produced without the consent of the patent owner shall, in the absence of proof to the contrary, be deemed to have been obtained by the patented process:

(a) If the Product obtained by patented process is new;

(b) if there is a substantial likelihood that the identical product was made by the process and the owner of the patent has been unable through reasonable efforts to

determine the process actually used.

2. Any Member shall be free to provide that the burden of proof indicated in paragraph 1 shall be on the alleged infringer only if the condition referred to in subparagraph (a) is fulfilled or only if the condition referred to in subparagraph (b) is fulfilled.

3. In the adduction of proof to the contrary, the legitimate interests of defendants in protecting their manufacturing and business secrets shall be taken into account.

PART VI

TRANSITIONAL ARRANGEMENTS

Article 65

Transitional Arrangements

1. Subject to the provisions of paragraphs 2, 3 and 4, no Member shall be obliged to apply the provisions of this Agreement before the expiry of a general period of one year following the date of entry into force of the WTO Agreement.

2. A developing country Member is entitled to delay for a further period of four years the date of application, as defined in paragraph 1, of the provisions of this Agreement other than Articles 3, 4 and 5.

3. Any other Member which is in the process of transformation from a centrally-planned into a market, free-enterprise economy and which is undertaking structural reform of its intellectual property system and facing special problems in the preparation and implementation of intellectual property laws and regulations, may also benefit from a period of delay as foreseen in paragraph 2.

4. To the extent that a developing country Member is obliged by this Agreement to extend product patent protection to areas of technology not so protectable in its territory on the general date of application of this Agreement for that Member, as defined in paragraph 2, it may delay the application of the provisions on product patents of Section 5 of Part II to such areas of technology

for an additional period of five years.

5. A Member availing itself of a transitional period under paragraphs 1,2,3 or 4 shall ensure that any changes in its laws, regulations and practice made during that period do not result in a lesser degree of consistency with the provisions of this Agreement.

Article 66

Least - Developed Country Members

1. In view of the special needs and requirements of least-developed country Members, their economic, financial and administrative constraints, and their need for flexibility to create a viable technological base, such Members shall not be required to apply the provisions of this Agreement, other than Articles 3, 4 and 5, for a period of 10 years from the date of application as defined under paragraph 1 of Article 65. The Council for TRIPS shall, upon duly motivated request by a least developed country Member, accord extensions of this period.

2. Developed country Members shall provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least-developed country Members in order to enable them to create a sound and viable technological base.

Article 67

Technical Cooperation

In order to facilitate the implementation of this Agreement, developed country Members shall provide, on request and on mutually agreed terms and conditions, technical and financial cooperation in favour of developing and least-developed country Members. Such Cooperation shall include assistance in the preparation of laws and regulations on the protection and enforcement of intellectual property rights as well as on the prevention of their abuse, and shall include support regarding the establishment or reinforcement of domestic offices and agencies relevant to these matters, including the training of personnel.

PART VII

INSTITUTIONAL ARRANGEMENTS; FINAL PROVISIONS

Article 68

Council for Trade-Related Aspects of Intellectual Property Rights

The Council for TRIPS shall monitor the operation of this Agreement and in particular. Member's compliance with their obligations hereunder, ans shall afford Members the opportunity of consulting on matters relating to the trade-related aspects of intellectual property rights. It shall carry out such other responsibilities as assigned to it by the Members, and it shall, in particular, provide any assistance requested by them in the context of dispute settlement procedures. In Carrying out its functions, the Council for TRIPS may counsult with and seek information from any source it deems appropriate. In consultation with WIPO, the Council shall seek to establish, within one year of its first meeting, appropriate arrangements for cooperation with bodies of that Organization.

Article 69

International Cooperation

Members agree to cooperate with each other with a view to eliminating international trade in goods infringing intellectual property rights. For this purpose, they shall establish and notify contact points in their administrations and be exchange information and cooperation between customs authorities with regard to trade in counterfeit trademark goods and pirated copyright goods.

Article 70

Protection of Existing Subject Matter

1. This Agreement does not give rise to obligations in respect of acts which occurred before the date of application of the Agreement for the Member in question.

2. Except as otherwise provided for in this Agreement, this Agreement gives rise to obligations in respect of all subject matter existing at the date of application of this Agreement for the Member in question, and which is protected in that Member on the said date, or which meets or comes subsequently to meet the criteria for protection under the terms of this Agreement. In respect of this paragraph and paragraphs 3 and 4, copyright obligations with respect to existing works shall be solely determined under Article 18 of the Berne Convention (1971), and obligations with respect to the rights of producers of phonograms and performers in existing phonograms shall be determined solely under Article 18 of the Berne Convention (1971) as made applicable under paragraph 6 of Article 14 of this Agreement.

3. There shall be no obligation to restore protection to subject matter which on the date of application of this Agreement for the Member in question has fallen into the public domain.

4. In respect of any acts in respect of specific objects embodying protected subject matter which become infringing under the terms of legislation in conformity with this Agreement, and which were commenced, or in respect of which a significant investment was made, before the date of acceptance of the WTO Agreement by that Member, any Member may provide for a limitation of the remedies available to the right holder as to the continued performance of such acts after the date of application of this Agreement for that Member. In such cases the Member shall, however, at least provide for the payment of equitable remuneration.

5. A Member is not obliged to apply the provisions of Article 11 and of paragraph 4 of Article 14 with respect to originals or copies purchased prior to the date of application of this Agreement

for the Member.

6. Members shall not be required to apply Article 31, or requirement in paragraph 1 of Article 27 that patent rights shall be enjoyable without discrimination as to the field of technology, to use without the authorization of the right holder where authorization for such use was granted by the government before the date this Agreement became known.

7. In the case of intellectual property rights for which protection is conditional upon registration, applications for protection which are pending on the date of application of this Agreement for the Member in question shall be permitted to be amended to claim any enhanced protection provided under the provisions of this Agreement. Such amendments shall not include new matter.

8. Where a Member does not make available as of the date of entry into force of the WTO Agreement patent protection for pharmaceutical and agriculatural chemical products comnensurate with its obligations under Article 27, that Member shall:

(a) notwithstanding the provisions of Part VI, provide as from the date of entry into force of the WTO Agreement a means by which applications for patents for such inventions can be field;

(b) apply to these applications, as of the date of application of this Agreement, the criteria for patentability as laid down in this Agreement as if those criteria were being applied on the date of filing in that Member or, where priority is available and claimed, the priority date of the application; and

(c) provide patent protection in accordance with this Agreement as from the grant of the patent and for the remainder of the term, counted from the filing date in accordance with Article 33 of this Agreement, for those of these applications that meet the criteria for protection referred to in subparagraph (b).

9. Where a product is the subject of a patent application in a Member in accordance with paragraph 8(a), exclusive marketing rights shall be granted, notwithstanding the provisions of Part VI,

for a period of five years after obtaining marketing approval in that Member or until a product patent is granted or rejected in that Member, whichever period is shorter, provided that, subsequent to the entry into force of the WTO Agreement, a patent application has been filed and a patent granted for that product in another Member and marketing approval obtained in such other Member.

LIST OF ABBREVIATIONS

AMS	Aggregate Measurement of Support (in Agreement on Agriculture)
BISD	Basic Instruments and Selected Documents (published by GATT)
CCC	Customs Co-operation Council
CCC Secretariat	Secretariat of the Customs Co-operation Council
Dispute Settlement Understanding / DSU	Understanding on Rules and Procedures Governing the Settlement of Disputes
DSB	Dispute Settlement Body
FAO	Food and Agriculture Organisation of the United Nations
GATS	General Agreement on Trade in Services
GATT 1994	General Agreement on Tariffs and Trade 1994
HS	Harmonized Commodity Desciption and Coding System
IMF	International Monetary Fund
ISO	International Organization for Standardization
ISO/IEC	ISO/International Electrotechnical Commission

MFA	Arrangement Regarding International Trade in Textiles
PGE	Permanent Group of Experts (in Agreement on Subsidies and Countervailing Measures)
SCM	Subsidies and Countervailing Measures
Secretariat	Secretariat of the World Trade Organisation
SSG	Special Safeguard (in Agreement on Agriculture)
ST	Special Treatment (in Annex 5, Agreement on Agriculture)
TMB	Textiles Monitoring Body
TPRB	Trade Policy Review Body
TPRM	Trade Policy Review Mechanism
TRIMs	Trade-Related Investment Measures
TRIPS	Trade-Related Aspects of Intellectual Property Rights
TSB	Textiles Survillance Body
World Bank	International Bank for Reconstruction and Development
WTO	World Trade Organization
WTO Agreement	Agreement Establishing the World Trade Organisation

DECLARATION ON TRIPS PATENTS REGIME

1. The Forum of Parliamentarians on Intellectual Property was established on 3rd November, 1995 with the signing by the following senior parliamentarians of a joint letter on intellectual property related issues and their dangerous implications for the people of our country:

    1. Justice V.R. Krishna Iyer,
       Former Judge,
       Supreme Court, & Former Law & Home Minister,
       Kerala Government.
    2. Dr. Murli Manohar Joshi,
       MP Former President,
       Bharatiya Janata Party.
    3. Dr. Ashok Mitra,
       MP Communist Party of India (Marxist),
       Former Finance Minister,
       West Bengal Government.
    4. Shri S. Jaipal Reddy,
       MP Leader of Janata Dal in Rajya Sabha.
    5. Shri George Fernandes,
       MP President,
       Samata Party,
       Former Industry Minister,
       Government of India.
    6. Shri Indrajit Gupta,
       MP General Secretary,
       Communist Party of India.

Several Members of Parliament sent encouraging response to the letter dated November 3, 1995. Encouraged by this response, a conference of parliamentarians, eminent experts and academicians was held on January 24, 1996 at the Constitution Club, V.P. House, New Delhi. Over 75 participants took part in the deliberations of the Conference which was addressed by Justice V.R. Krishna Iyer, Former Judge, Supreme Court; Dr. Murli Manohar Joshi, MP; Shri George Fernandes, MP; Shri M.A. Baby, MP; Prof. Upendra Baxi, Dr. Arun Ghosh, Prof. Surendra J. Patel, Shri S.P. Shukla, Shri Ramaswamy R. Iyer, Shri A.P. Venkateswaran and many other eminent parliamentarians and experts.

II. 1. The Conference deliberated on the serious impact of the new patent regime proposed in the TRIPs Agreement of Final Act of Uruguay Round of GATT Negotiations and the future growth of science and technology, survival of national industry and wellbeing of our people at large. The new patent system will also have an adverse impact on people's welfare allover the world. This has, therefore, generated alround concern about the opening up of new opportunities for self-employment and employment in industries, availability of goods, particularly medicines at fair prices.

2. Many developing countries will face stagnation or negative growth in their industrial sector. Businesses, both big and small, will be forced to collaborate with powerful foreign competitors. Least developed countries will have to depend upon imports at high monopolistic prices.

3. Our farmers are faced with the prospects of complete dependance for their requirements of new varieties of seeds on the large transational corporations. Already there has been a noticeable rise in seed prices. Such dependence in as strategic a sector as food security will undermine the achievements of our farmers. It will expose our country to foreign pressures and threats in times of poor harvest. The Conference firmly believes that our people will never allow such a calamity to be imposed on us.

III. 1. The Agreement establishing the World Trade Organisation (WTO) came into force on January 1, 1995. The Government of India has ratified this Agreement together with all its annexed agreements. The people and their elected representatives in Parliament are deeply disturbed by the Government's cavalier endorsement of a Treaty of such immense proportion without any serious discussion of the issues both in and outside the Parliament. This was done despite continuous demands by the Members of Parliament and the people. This disregard of the Parliament and the people contrasts sharply with the Government's timidity in dealing with major industrial powers which are pressing it to open up our markets to be flooded by foreign exports. This

will cripple consumer goods industries and undermine the foundations of the capital goods industries which our country has built up over the past few decades.

2. These are the strong reasons why the Members of Parliament have not accepted the Government pressures to amend the Indian Patents Act of 1970. The Patents Act has served as a model for other developing countries in Latin America, Africa and Asia. and was also hailed by UNCTAD as a model statute for developing countries.

IV. Guided by these considerations of preserving our people's health and nutritional standards, of building up a strong industrial arm to defend the sovereignty and integrity of our country, of strengthening rapidly our self-reliant research and development capabilities, and of transforming our country to become a proud and equal partner in the comity of nations that this Conference of parliamentarians, experts and academicians unanimously adopt the following DECLARATION:

Reaffirming that every State has the sovereign and inalienable right to choose its economic system as well as its legal, social, cultural and political systems in accordance with its historic traditions and the express will of its people;

Recalling that the patent rights granted by the State confer a privilege and not an absolute monopolistic private right, as has been embodied in the TRIPs Agreement;

V. The Conference of this Forum of parliamentarians, experts and academicians

1. **Declares that :**

Any new formulations or revision of its national patent laws, India must continue to exercise its unequivocal sovereign right to protect the public health and nutrition and to promote its public interest in sectors of vital importance to its social, economic and technological development;

2. **Affirms that :**

Since the proposed patent system under TRIPs would require changing fundamentally the fine balance between private and public interests in the Indian Patents Act, 1970,

the TRIPs Agreement in its present form is unacceptable to us;

3. The Conference having carefully considered the TRIPs Agreement **asserts that** the TRIPs Agreement contains the following major critical harmful provisions:

(i) imposition of a monopolistic patent regime;

(ii) severe limitations on sovereign rights of the national Governments to legislate their own patent laws in accordance with their own national interests of development;

(iii) the extension of the patent system to life forms through the introduction of a patent or patent like protection for the plant life, the new regime threatens bio-diversity, severely erodes the traditional rights of the farmers and ligitimises the piracy by the transnational corporations of the cumulative achievement of the generations of the farming community of the third world;

(iv) self-reliance is a fundamental feature of our development and as such working of patents can be seen to have taken place only if domestic production facilities are set up based on patented technology: importation of a patented product cannot therefore be treated at par with domestic production;

(v) the place of national industries in patented products and processes must be ensured by a strong compulsory licensing system;

(vi) the transition period of ten years as provided in the TRIPs Agreement for implementation of the new patent regime in India is an empty shell in the most crucial areas of pharmaceutical and agro-chemical products where product patents have been introduced in the TRIPs Agreement in the quise of exclusive marketing rights with immediate effect. The exclusive marketing rights arrangement is totally unacceptable to us as such a system has serious adverse implications for the future self-reliant development of our

industries and the Research and Development;

(vii) The United States must be required to withdraw its measures contained in its Special and Super 301 provisions as they substitute unilateral action in place of multilateral negotiations; and

(viii) the provisions on cross-retaliation under the WTO system should be explicitly prohibited.

4. In view of the above, the Conference **urges** all political parties to inform our people through their programmes and by means of statements the severe implications of the TRIPs Agreement and prepare them for the struggle against the emerging unequal and exploitative global regime on the intellectual property matters;

5. The Conference further **urges** the political parties and their representatives in Parliament to defeat the proposed amendment to the Indian Patents Act, 1970; and

6. The Conference **decides** to establish close contact with the parliamentrians, experts and academicians of other developing countries to work out through united efforts the common lines of approach to achieve the objectives set out above.

Sigzed :

B.K. KEAYLA (Co-ordinator)

GEORGE FERNANDES
Dr. ASHOK MITRA
JUSTICE V.R. KRISHNA IYER
Dr. MURLI MANOHAR JOSHI (Convenor)
JAIPAL REDDY
INDRAJIT GUPTA
CHANDRASHEKHAR
(Former Prime Minister of India)

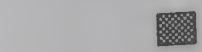
THE NATIONAL FOREST POLICY STATEMENT (1988)

"The holders of customary rights and consessions in forest areas should be motivated to identity themselves with the protection and development of forests from which they derive benefits. The rights and concessions from forests should primarily be for the bonafide use of the communities living within and around forest areas, specially the tribals. (4,2. 4.2)

The life of tribals and other poor living within and near forests revolves around forests. The rights and concessions enjoyed by them should be fully protected. Their domestic requirements of fuelwood, fodder, minor forest produce and construction timber should be the first charge on forest produce. These and substitute materials should be made available through conveniently located depots at reasonable prices. (4.3.4.3)

Having regard to the symbiotic relationship between the tribal people and forests, a primary task of all agencies responsible for forest management, including the forest development coorporations should be to associate the tribal people closely in the protection, regeneration and development of forests as well as to provide gainful employment to people living in and around the forest. While safeguarding the cousomary rights and attention to the following... (4.6)

Appropriate ligislation should be undertaken, supported by adequate infrastructure, at the Centre and State levels in order to implement the Policy effectively. (4.15)



CAMPAIGN

AZAADI SE SWARAJYA*

(From Independence To Self Governance)

With focus on
"Peoples' Rights over Natural Resources"

CAMPAIGN OF JAN VIKAS ANDOLAN (JVA) AND SIMILAR-MINDED MOVEMENTS, ORGANIZATIONS AND INDIVIDUALS

LAUNCHED ON THE OCCASION OF 50TH YEAR OF INDEPENDENCE - AUGUST 14TH, 1996 (MIDNIGHT)

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* This third draft of the Campaign write - up based on discussion with several friends and two meetings one in Bangalore on June 1st and 2nd 1996 and the other in Bhopal on July 20-21. '96 has been prepared by Shri S.R. Hiremath of JVA ('Ashadeep'. Jayanagar Cross. Saptapur. Dharwad-580 001. Karnataka) The author is particularly grateful to Dr. B.D. Sharma. Sri Chandi Prasad Bhatt. Prof. M.K. Prasad. Shri Pradeep Prabhu. Dr. Ravi Chopra. Shri P.V. Raj Gopal. Shri Prashant Bhushan. Shri Ajit Bhattacharjea. Ms. Aruna Roy. Sri. Rakesh Dewan. Dr. Ramachandra Guha. Shri Gautam Bandyopadhyaya. Shri Datta Savle. Shri Jagadish Pradhan.Shri Ghanshyam. Shri S. Sreekant. Shri Uday Kumar and other friends for their valuable comments and suggestions.

AZAADI SE SWARAJYA

(FROM INDEPENDENCE TOWARDS SELF RULE)

S.R. Hiremath

I. INTRODUCTION :

Eventhough we gained freedom from the British Rule in 1947, the policies and programmes we have pursued have benefitted only a small segment of the society. However, vast sections of people especially those who are dependent on natural resources like forest, land and water (tribals, fishworkers, rural poor etc) and the increasing number of slum dwellers in the urban areas have been further impoverished. The natural resource base has been further eroded with increasing deforestation and the powerful forces - both Indian and foreign - increasing their stranglehold on these resources and overexploiting these resources in an unsustainable way. There is ever increasing migration of the tribals and rural poor - many a times evicted out of their natural habitat in the name of "development" like big dams, power plants, and other mega-industrial and commercial ventures.

In other words, the dream of "Swarajya" that our Freedom Movement held out for the poor and exploited has eluded most people. It is, therefore, imperative that we launch during this important 50th year of independence a campaign "**Azaadi Se Swarajya**" (From Independence to Self Rule) drawing

inspiration from our long freedom struggle. We need to make a determined collective effort to change our policies, legislations, programmes and most importantly our mindset. In brief, total transformation based on the vision of "Swarajya". One of the major foci would be on "Peoples' Rights over Natural Resources*", especially , the tribals, fishworkers and other rural poor gaining greater control over their land, water and forests, which they have sustained over the centuries utilizing them in a frugal and sustainable way. The continued systematic assault on these Common Property Resources (CPRs) - in the name of development and scientific management - have most seriously threatened the very survival base of vast sections of these people.

It is very essential to recognize the rights of these deprived sections of the people over these natural resources that they have tried to protect against heavy odds. **In other words, we have to accept perhaps the greatest challenge to all of us social activists, Scientists and other concerned about the future of this country - to put "Peoples' Rights Over Natural Resources" on the national agenda.**

* It is very essential to emphasize that the rights of people always emanate from the responsibilities they shoulder: The tribals, fisherfolk and rural poor derive their rights from the responsibilities that they have shouldered over centuries of protecting biodiversity against heavy odds and utilized these resources in a frugal and sustainable way.

Our National Freedom Movement* successfully placed the rights of small farmers ("land to the tiller") and industrial workers on the national agenda but left unfinished the task of "Peoples' Rights over Natural Resoures". We must also recognize that it is a challenge that will take not just years but decades of dedicated collective work on the part of all concerned persons from all walks of society including the sensitive and conscientious persons in the government and other sectors.

One of the effective ways of achieving this is to spread awareness not only in the deprived sections of the society who have to play the primary role in bringing the fundamental changes but also among the youth - both urban and rural ***so that they throw their lot with the poor (rather than the rich) as it happened during our freedom struggle.***

II. CONCEPTS OF PROGRESS AND CIVILIZATION

Perhaps the greatest need of the hour is to challenge the very concepts of progress and civilization that our national poet Rabindranath Tagore did several decades ago in the following words :

* Our National Freedom Movement did not begin in 1857 as most students learn in schools but in late 1700 when the tribal leaders began protest movement and rebellion against the Britishers to assert their rights over land. forest and water. The tribal rebellions led by their leaders like Manjhi-Kanhu-Munda have, in fact. initiated the freedom movement and contributed to it significantly. Manjhi-Kanhu-Munda is as significant trio as Lal-Bal-Pal in our freedom struggle.

"We have for over a century been dragged by the prosperous West behind its chariot, choked by the dust, deafened by the noise, humbled by our own helplessness, and overwhelmed by the speed. We agreed to acknowledge that this chariot-drive was progress, and that progress was civilization. If we even ventured to ask, "Progress towards what and progress for whom", it was considered to be peculiarly and ridiculously oriental to entertain such doubts about the absoluteness of progress. Of late, a voice has come to us biding us to take count not only of the scientific perfection of the chariot but of the depth of the ditches lying across its path."

-Rabindranath Tagore

This statement assumes much greater significance at this crucial time in our history when the powerful forces like the Multi National Corporations (MNCs) in the name of "Liberalisation" and "Globalisation" are trying to enslave us taking help of our own elite ruling class. The youth of today who are being brain-washed into joining the rich through all allurements including messages in the electronic media need to think through what is happening - especially during 50th year of independence. The forces of "Pseudo Progress" who

entered this country in the form of "East India Company" are at work again-in a more concerted way than ever before to enslave the third world countries and the instruments like the "International Monetary Fund (IMF)" and "World Trade Organization (WTO)" are being fine tuned to achieve the job.

Social Thinkers and activists like Shri. Jyotiba Phule and rebellion tribal leaders like Birsa Munda have through their struggle for issues of equality, control over natural resources (forest, land and water) have questioned the values and the methods of British Rules and our own elite (upper caste leaders) in their own way through books like the "*Shetakaryacha Aasud* (Cultivator's Whipcord)".

Sensitizing our urban and rural youth to these developments and making them take up the challenge of involving themselves at various levels is a major focus of this campaign. The then young men like (Tilka) Manjhi - (Sidhu) Kanhu - (Birsa) Munda, Lal (Lajpat Rai) - Bal (Gangadhar Tilak) (Bipin Chandra) Pal, Subhas Chandra Bose - (Jawaharlal) Nehru - (J.C.) Kumarappa, who in their own way tried to understand and articulate ways of gaining political and economic freedom can be sources of inspiration for the youth - to think about the state of nation now with 1990s and develop a vision of progress and civilization rooted in the experiences of our countrymen especially the tribals, fishworkers and rural poor.

III. OBJECTIVES OF THE CAMPAIGN :

This campaign is developed drawing from the good work of various peoples' movements and NGOs working for the cause of empowerment of the people dependent on natural resources for their very survival. Such groups include Jan Vikas Andolan (JVA), the National Front for Tribal self Rule (NFTSR), National Fishworkers Federation (NFF) including Action Committee against Joint Ventures with foreign companies, National Committee for Protection of Common Land Resources (NCPCLRs), Lok Shakti Abhiyan, Azaadi Bachao Andolan, National Campaign Committee for Rural Workers, National Campaign on Peoples' Resources, Charkha etc., on one hand and the Abhiyan in Bihar, Narmada Bachao Andolan (NBA), Common Lands Movement in Karnataka, Kerala Sastra Sahitya Parishad, Networks of Tribals in various states etc.

Based on these experiences, the National Meeting of Jan Vikas Andolan (JVA) held in Bhagalpur in September 95 and the National workshop on Forest Lands Issue of NCPCLRs held in Bangalore in August 95 and National Seminar on "Community Control Over Natural Resourcess" in December 1995 in Ranchi (Bihar) preceded by 20 day padayatra through six districts of Jharkhand area in Bihar by Abhiyan decided to launch the campaign on **"Peoples' Rights Over Natural**

Resources: Putting it on the National Agenda". This was discussed with other similar minded groups and movements who have played an important role in definite activities from having a dialogue with political party leaders and MPs in New Delhi to the grass root campaign on implementation of Bhuria Committee Report in Karnataka through rallies and a major civil disobedience programme on December 22, 1995 and yatra from 15.11.95 from Kanyakumari to Madras that culminated in a major rally of over 10,000 tribals in Madras in Tamil Nadu on December 2nd and systematic grass root mobilization in the western part of Orissa with a rally and memorandum signed by 44,000 tribals and against the move of Shri Kamal Nath to give 2 million hectares of forest lands for industrial and commercial interests. The sucessful campaign involving reputed NGOs from all over the country on the forest lands issue is an important milestone in the collective efforts by the NGOs and People's Movements. The National Meeting of JVA held in Madras, where the 120 page booklet on "**Peoples Rights over Natural Resources : putting it on the National Agenda***" was released, decided to launch during the 50th year of independence a campaign

This 120 page booklet documents the various activities in different parts of the country including press clippings. Further, it is very essential that we study the tribal history carefully, firstly to document the true history as it happened and secondly, to derive inspiration from their protests and heroic struggles. It is also very necessary to understand the concepts of self rule as reflected by the actions and writings of persons like M.K. Gandhi, M.N. Roy, J.P. Narayan and Ram Manohar Lohia.

on " Azaadi Se Swarajya": **The concept of self rule contained in the Panchayat Raj legislations (73rd and 74th Amendment to the Constitution) and the Bhuria Committee Report (for tribal areas) embodies the Rights of the People over Natural Resources in a broader way.**

We are giving below the major objectives of this campaign:

1. To develop a clear concept of "Swarajya" or Self Rule:

It is important to understand this concept in all its ramifications - cultural, social, political, economic and environmental (ecological) in a historical context. This requires a systematic analysis starting with the protest and rebellion by tribal leaders like Kanu-Sidu-Birsa Munda to the "Indian Constitution" itself. Serious lacunae that crept in the process of Constitution making as reflected in the debates of the Constituent Assembly and understanding of the make-up of the membership of the Constituent Assembly itself are necessary to understand this historical development and determine what basic changes may be needed now to make the concept of Self Rule relevant in the present context.

*More recent developments like the "Bhuria Committee Report" extending salient features of the 73rd and 74th Amendments to the Constitution to the Tribal areas and the work of the National Front for Tribal Self Rule have to be implemented effectively through peoples' campaign at the grass roots. The Panchayat Raj System** as has been practised during last five decades in several places in India including the more recent 73rd and 74th amendments to the Constitutions and their impact have to be studied carefully.

What further changes and efforts we need to make to give content and meaning to the concept of "Swarajya" need to be discussed at various fora, and formulated in a truly participatory process - from tribal hamlet to the national level.

2. Operationalising National Forest Policy 1988:

We have an enlightened National Forest Policy (NFP) which was adopted unanimously by our Parliament in 1988.

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* For details, please see the booklet ***"Whither Tribal Areas?"*** by Dr. B.D. Sharma, President, Bharat Jan Andolan, Sahayog Pustak Kutir, A-37, Nagli Rajapur, Nizamuddin East, New Delhi-110 013 (Price: Rs.30/-)

** It is very necessary to read books on Panchayat Raj like "Samudayik Samaj : Roop aur Chetan" for ideas of thinkers like Jai Prakash Narayan who had thought a great deal about it from 1940s to 1970s. (The first article he wrote about this vital issue from Lahore Fort Jail in the 1946 itself is very illuminating.

Unlike the focus of earlier policy on commercial and industrial needs, the present NFP 1988 emphasises on maintenance of ecological balance and meeting the basic needs of people living in and around the forests, with active participation of local communities and NGOs in protection of forests and development of degraded lands.

However, major challenges exist to operationalise it by thorough institutional changes in the Forest Department i.e. the Forest Department needs to restructure its organization and culture to meet the basic objectives of the NFP.

The broad nature, structure and detailed actions of the institutional changes in the Forest Department need to be discussed at various levels and more significantly, effective pressure is to be built on Central and State Governments to put the mandate of the Parliament into practice at the ground level.

There is an urgent need to work out specific areas of campaign like implementation of the Bhuria Committee Report, the introduction in the Parliament of the "**Amended Draft Forest Bill 1995- Voluntary Organizations**"*, Rights of Forest

* For Details please see publication by Samaji Parivartan Samudaya(SPS) et al., "Ashadeep" Jayanagar Cross, Saptapur, Dharwad - 580 001 9Suggested Donation Rs. 100/-)

dwellers to procure, process and markets the Non-Timber Forest Products (NTFPs) and involvement of women in decision making process and not leasing of forest lands for commercial and industrial interests.

The Protected Areas (National Parks and Sanctuaries) which have increased in area and have brought the officials and local people into conflict needs to be carefully studied. Just like the concept of Joint Forest Management, (JFM) there is an urgent need to formulate Joint Protected Area Management (JPAM) and involve tribals as decision makers and not alienate them by trying to get them out of the forests, in the name of "eco - development" or rehabilitation; The recent Global Environment Fund - World Bank aided eco- development project needs to be debated widely and proper measures for involvement of tribals and NGOs in this debate is very essential.

Please see the article " Peoples' Forests" (On page 74-78) in the booklet "Peoples' Rights Over Natural Resources" (**Jagrut Vani** of March 96). and the book "Forests, People and Profit" by N.C. Saxena which gives details of operationalising of the NFP 1988.

3. Peoples' Policies on Water Resources :

Need for decentralisation of water resource management : Like to National Forest Policy, there is an urgent need for working out a National Water Resource Policy from the perspective of 2050 and also principles of livelihood, democracy (participation) equity, sustainability and social justice. The decision making in the implementation of water resources development projects and control of assets should be handed over to the village / local community in a responsible way. All mega projects presently under implementation should be reviewed by independent committees pending which work should be stopped. All major water management projects should be undertaken only after open public hearing and village level meeting process.

Please see the article "**Peoples' Policies on Water Resources**"* (pages 78-81) in the booklet referred earlier (**Jagrut Vani** of March 1996)

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* For details, please read the article by Dr. Ravi Chopra et al. entitled "***Natural Bounty: Artificial Scarcity***" by Peoples' Science Institute (PSI), 252, Vasant Vihar-1, Dehra Dun - 248 006

4. Right to Information and Empowerment of the poor:

An important movement initiated by the Mazdoor Kisan Shakthi Sanghatan (MKSS) through a Dharma in Beawar in Alwar District in Rajasthan has gained national significance as an effective means for empowerment of the rural poor. The right to information (the right to obtain photocopies of any document from Panchayat/other Government Offices including copies of bills, vouches and muster rill of development work) has now became a very powerful tool for the poor to fight corruption at grass root level and establish antitlements in development programmes. The important campaign to pressure the Government of Rajasthan to issue a comprehensive Government order based on the assurance of the Chief Minister in the Legislative Assembly in April 1995 has received widespread support of activists, journalists and others. This was preceded by *public hearings (*Jan Sunwayi*) held in various villages during December '94 - January '95, just before the Panchayat elections of the state and one later after the elections in April'95 jointly with elected representatives. These hearings brought forth four succinct demands:

*For details see the article ***"Public Hearing: A Mode for People's Monitoring"*** by Nikhil Dey, Aruna Roy, Shankar Singh and Kavitha Srivastava, MKSS, P.O. Barar, Dist: Rajasamand, Rajasthan

transperancy of information, social audit of development expenditure, accountability of officials and recovery of funds and redressal of grievances. The MKSS has made the Right to Information - which was earlier seen as an elite urban concept - relevant to the poor, making it a precondition of livelihood and not freedom of expression alone. We need to relate this to what Justice P.B. Sawant, Chairman of Press Council of India (Former Supreme Court Judge) is doing by spearheading an attempt to bring pressure on the government for freedom of Information Act.

5. Student Involvement Programmes:

Purpose here is to generate activists and supporters by addressing students at colleges and Universities during the 50th year of Independence, identifying concerned students about the issues of the tribals and rural poor so that they will work and side with the poor rather than the rich. Organizing Student Involvement Programmes in the field where NGOs and Peoples' Movements are working with tribals and rural poor will provide good orientation for these young people.

To motivate them . we need to give historical background of the Freedom Movement and its relevance to the present situation.This can be done by sharing the dreams of those involved in our National Freedom struggle and how the present

youth- urban and rural - need to be involved in understanding them and dedicating themselves to realize the "**unfulfilled dreams**" of our freedom movement. It is very important to analyse what went on, why these dreams were not fulfilled and how practical and effective ways can be developed to work towards fulfilling these dreams.

It is very important note that the real Freedom Movement began not in 1857, as it is popularly believed but in late 1700s when the tribals started protesting and rebelling against the British Regime for their efforts to control forest lands through their land settlement Act and in more organised way through the rebellions led by their (tribal) leaders like Tilka Manjhi, Sidhu Kanhu and Birsa Munda; These protests and rebellions continued through the British Rule.

The later leaders of our freedom struggle also had, in focus the exploitation of the common man in mind and how best to remove this exploitation. For example, after General Elections in 1937, Jawaharlal Nehru had the following to say:

"**We went to our people and spoke to them of freedom and the ending of exploitation; we went to that forgotten creature, the Indian peasant and remembered that his poverty was the basic problem of India; we identified ourselves with him in his suffering and talked to him on how to**

get rid of it through political and social freedom"*.

There are innumerable times in our freedom movement when the stalwarts have spoken in no unmistakable terms this very thought epitomized in the Gandhian words as the "last man" being the focus of their efforts.

However, the developments since independence have proved otherwise. There is an urgent need to analyse, and understand as to what went wrong and how best we can rededicate ourselves to this noble and challenging task. However, the most important finding of our Freedom Movement Leaders like Tilka Manjhi - Sidhu Kanhu - Birsa Munda, Lal-Bal-Pal, Gandhi-Nehru-Kumarappa, Narendra Dev - J.P. Narayan - Ram Manohar Lohia, Dadabhai Naoroji, Madame Cama, Khan Abdul Gaffar Khan - Moulana Abul Kalam Azaad, Jyotiba Phule - Baba Saheb Ambedkar - Aruna Asaf Ali that they must reach out to the masses of people and they had tremendous faith in the common people and their capacity to struggle for justice and deep conviction in the fact that ***"the independence can come only through struggle of the Indian people".***

** For details, please see the article "Window-Dressing the Constitution" by Shri Ajit Bhattacharjea, Director, Press Institute of India, New Delhi from the forthcoming book ***"Social Justice and the Indian Constitution".***

It is equally important to understand as to how in the course of their campaign, they defined the elements of nationalism in the light of humanist ideals which inspired all Indians and established the very foundations of not only the freedom struggle but also the Indian concept of nationhood and self rule needs to be understood.

IV. FOLLOW UP OF NATIONAL MEETING OF JVA IN MADRAS:

As stated earlier, the need for the campaign was discussed in the National Meeting of Jan Vikas Andolan (JVA) held in Madras in March 1996. It was unanimously agreed that this campaign "**Azaadi Se Swarajya (From Independence towards self Rule**") is very much needed to be taken up for putting **"Peoples' Rights over Natural Resources,"** on the National Agenda" and develop a more comprehensive perspective of social change.

It was also felt that it was very essential to work out systematically outlines of the campaign by involving the various segments of the society, viz., the activists (from Peoples Movements and NGOs working towards basic changes), the concerned academics sensitive persons from media people-oriented civil servants and sensitive policy makers (people's representatives).

With this in view, two special meetings were planned on June 1 and 2 in Bangalore and July 20

and 21, 1996 held in Bhopal are being held and where selected persons from the various sectors are being brought together to workout details of the campaign.

Further, some more issues have come up, as suggestions from concerned friends from the various movements and other friends, which are as follows:

(i) **Urban Poor** : It is important to broad base the campaign so that it includes the various sections of the society who are affected by the present mode of development; An important sector is urban poor who are mainly ecological refugees from the rural areas.

(ii) **Corruption from grass root level to Prime Minister level** : There are efforts going on in this direction at Supreme Court and High Court level by activists like Shri Prashant Bhushan and sensitive journalists to the grass root level by Consumer Groups like the one in Udupi; There is a need for greater and active involvement in this vital issue by concerned groups and individuals.

V. METHODOLOGY:

Instead of conducting expensive all India meetings, there will be series of regional meetings which will be held in various parts of the country, as part of 50th year of independence. JVS will take

major responsibility in organising such regional meetings. In South India (four Southern States and Pondichery) a regional meeting is planned in August/September 1996. Selected persons from NGOs, Peoples' Movements, Academicians including sensitive press people will be invited for this meeting.

These persons will act as resource persons for further meetings at state level and more importantly in addressing students in selected Colleges and Universities for indentifying youth for "Student Involvement Camps" to be held in vacation/lean period for them.

Workshop and Seminars will be held on Operationalising of National Forest Policy and related issues for chalking out specific action programmes for achieving the objectives outlined earlier.

We will also hold workshops on "Advocacy" especially on burning issues like the Eco-developmetn plan supported by GEF-World Bank which is being opposed by the tribals of Nagarahole and others as they feel that it is meant to evict them from their habitat. A workshop for two days is being planned to be held in Ooty on August 17-18, '96. Sri. Ghanshyam of Abhiyan, Bihar has planned series of meetings in 15 districts of Jharkhand area involving activists, students (urban

and rural) etc.

The meeting in Bhopal discussed and finalized further details of the campaign including the regional meetings. Several persons and organisations (eg., Ekta Parishad - M.P. Peoples' Science Institute and Dasholi Gram Swaraj Mandal (DGSM), UP. have come forward to take up specific activities in various areas. Some friends (Shri. P.V. Rajagopal, Shri. C.P. Bhatt and Dr. Ravi Chopra) have come forward to initiate activities in some of the States. It was also decided that the Campaign should be kept open for any group of network of people's organisations to join and should not be controlled or dominated by any group. It should be a collective activity taking up the greatest challenge before us; to put People's Rights over Natural Resources on National Agenda.

Coordination Centres:

The Bhopal Meeting further decided that there should be a National Coordianting Committee consisting of concerned persons with a Coordinator. There would be two Coordinating Offices. the SPS Office in Dharwad, Karnataka (for communications in English) and the Abhiyan Office in Madhupur, Bihar (for Hindi Communications)

Some suggestions for working out the campaign are as follow:

i] The campaign should be a process of education rather than idolatry. It should be used to learn about and rediscover our common heritage of the freedom struggle . The learning process should encompass a wide range of people, from urban intellectuals to the common rural folk.

ii] The issues and themes of the campaign must be put across in a creative manner and not appear to be either state-sponsored propaganda or vulgarisation of the freedom struggle.

iii] It should enhance the existing and popularly known knowledge base of the history of India's freedom struggle in two ways ; by communicating what professional historians know, to the people as well as by the people telling the academicians of the local struggles and recounting the oral history of their area.

iv] At a time when the nation is facing a serious shortage of resources, all ostentation should be avoided and the emphasis should be on enhancing peoples participation, and raising voluntary contributions from individuals and institutions.

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FROM THE PRESS

ORDINANCE LIKELY ON PLANT VARIETIES LAW *

— Hema Ramakrishnan

The Governement may promulgate an ordinance to bring into force the Plant Varieties Protection (PVP) Act to safeguard the rights of breeders and farmers under a *sui generis* system. This follows the Agriculture Ministry's recommendation that India should consider acceding to the International Union for the Protection of New Varieties and Plants (UPOV) Act of 1978.

The PVP law has to be in place if the Government decides to comply with UPOV 1978, sourced said. UPOV 1978 will close when UPOV 1991 comes into effect. The 1991 Act is yet to be ratified by five member countries.

The Government's thinking is based on the assumption that UPOV 1991 may come into effect in the latter half of 1996, althouh there is still uncertainty regarding the time.

"The PVP Act has to be in place this year if UPOV 1991 does come into force and India agrees to accede to the 1978 UPOV convention. "source said. Since the PVP law cannot be passed by the present Parliament, the Government is likely to adopt the ordinance route, they added.

The law Ministry is understood to have vetted the PVP Act drafted by the Agriculture Ministry. The draft Act and the recommendation that India should comply with UPOV 1978 would be forwarded to the Cabinet shortly for clerance.

Earlier, the Government was considering whether it should accede to UPV at all. UPOV is an inter-governmental organisation based on an international convention signed in 1961 and having 23 members. The rationale behind the protection of plant breeders rights was that there was no guarantee that the rights a state was prepared to grant to its own nationals would be extended to the nationals of other states. Besides, protection of varieties in one state

* Article Published in *The Hindu Business Line* dated March 12, '96

and lack of protection in another could result in distortion of trade terms.

Sources said that after weighing the pros and cons, the Agriculture Ministry in consultation with agricultural scientists, has recommended that it would be prudent to accede to the UPOV 1978 convention as it is "easier" to comply with. However, there is difference of opinion among academicians on whether India should accede to UPOV 1978 or wait for UPOV 1991 to come into effect.

If India does not accede to UPOV 1978, then it has time till the year 2000 to comply with the obligation under the Trade Related Intellectual Property Rights (TRIPS) in the GATT treaty to formulate a *sui generis* system for the protection of new plant varieties.

The proclaimed objectives of the law are to ensure increased availability of high quality seeds and planting material through effective quality seed distribution, to stimulate research and development both in the public and private sector for varietal development, to provide a fillip to investment in research by ensuring appropriate returns on investment by public and private sectors, to provide protection to genetic resources and germplasm collections by safeguarding biological diversity and to build an effective mechanism for protecting the rights of farmers and researchers.

The Agriculture Ministry has taken the stand that while there should be no objection to microbiological processes being patented, naturally occurring genes, howsoever derived, shall not be patented.

PROTECTION PRESSURES *

That the Narashimha Rao Government is in a hurry to have Plant Varieties Protection (PVP) Act in place before the elections is evident from its resort to the ordinance route. The justification for the rush is the fact that if India dos not have in place a sui generis system by the deadline of this year-end, offered by the International Union for the Protection of New Varieties and Plants (UPOV) Convention of 1978, it may have to accede to the UPOV Convention of 1991. Both the UPOV conventions seek to aid the plant breeder, offering protection to the seeds developed by him with a plant breeder's right (PBR) if they satisfy the criteria of novelty, distinctness, uniformity and stability. In the Government's view the 1978 Convention is more sensitive to the farmers' needs for it confers on the breeder the exclusive commercial right, while the 1991 document gives exploitation rights. This means that if the country acceded to the former, a breeder would only have the right to produce the plant variety for commercial marketing alone. However under UPOV 1991, the right would extend to multiplication, conditioning for propagation, marketing, importing, exporting and stocking for any of these purposes.

The major plus point the Government perceives in UPOV 1978 is the privilege it gives farmers to use the farm-saved seeds for subsequent crops and for non-formal exchanges. UPOV 1991 rules out any exchange of seeds, formal or non-formal. But this is so far as the farmer-friendliness of UPOV 1978 goes. For it largely talks only of farmers' privileges and not of their rights. Whatever the nitty-gritty of these conventions, the fact remains that neith[redacted] recognises the farmer's efforts at developing the germplasm. All the native stock from which the breeder gets new varieties have evolved over generations, by sifting the best grains for the seeds. But the various breeder's rights seem to forget this legacy and readily offer proprietorial rights to the breeder who stands on the shoulders of generations of innovators past. Ignoring all these

* Editorial in *The Hindu Business Line* dated March 24, 1996.

concerns, the Narasimha Rao Government signed the GATT document of the World Trade Organisation, which makes a svigeneris system of plant protection mandatory. There was no parliamentary or public debate worth its name before the Government took this decision which has implications on the lives of more than 70 percent of the population. The same Government now wants to take the ordinance route to pass the Act.

While the Government is in a hurry to put in place an intellectual propertyu regime, it has not done much work on establishing a comprehensive biodiversity legislation, governing access to the biological resources and related knowledge of the local communities so as to ensure their rights and a share for them in the benefits arising from their commercial exploitation. The Government must develop this legisaltion since it has signed the legally-binding Convention on Biological Diversity (CBD) at the United Nations Conference on Environment and Development in June 1992 at Rio. As one of the biggest biodiversity-rich developing countries, with perhaps the largest population of farmers, India must incorporate the rights of farmers into its sui generis system for plant protection. For this the country need not necessarily use the models created by UPOV as the Indian concerns are unlikely to be reflected in them: industrialised countries are the only members of the UPOV Convention. There is enough intellectual resources in the country to develop an independent sui generis model. The farmers and village communities do not have the same clout as the pressure groups created by the seed companies. So until the legislation for protecting the traditional rights of the people is in place, the Government should not rush through pushing the sui generis legislation on plant protection and patents.

PLEA TO NOTIFY TRIBAL, FOREST VILLAGES

The Hindu Business Line **May 2, 1996**

–S.Gopikrishna Warrier

MADRAS, May 1 :- NOTIFICATION of tribal and forest villages, formation of tribal and forest labour co-operatives and protection committees are among the specific recommendations and protection committees are among the specific recommendations made by a network of environmental non-Governmental organisations for the amendment of the Wildlife Protection Act(WPA) of 1972.

These NGOs, which were responding to a request made by the Union Ministry of Environment and Forests(MoEF) to suggest amendments to the WPA, have taken into consideration the implications of the Convention on Biological Diversity (CBD) to which India is a signatory.

According to the recommendations drafted by Mr.B.J.Krishnan of the Save Nilgiris Campaign and Mr.S.R.Hiremath of the Samaj Parivartana Samudaya, the basic assumption made was that no conservation strategy could succed without integrating the biomass needs of the forest dwellers. The WPA covered the protection and maintenance of protected areas comprising 75 national parks and 421 wildlife sanctuaries.

The NGOs want the recognition of tribal villages as legal units in the Act. A separate schedule should be appended to the Act, listing the names of villages that have been declared tribal villages, according to the NGOs. At present, the various schedules in the Act only list the names of animals under various categories of protection.

In addition to the tribal villages, forest villages should be notified through a schedule added to the Act. Forest villages are situated inside protected areas, but their inhabitants are not necessarily tribals.

According to the NGOs, forest villages are not recognised legal entities in the existing enactments. The Indian Forest Act 1927 refers to "forests adjoing villages" but not "villages adjoining forests". The National Forest Policy of 1998, However, encourages the development of forest villages.

For the benefit of the inhabitants of the tribal and forest villages the NGOs have suggested the amendment of Section 27 of the Act. This Section which restricts the entry of people into the protected areas, has to be amended to permit the inhabitants of these villages rights of passage through the forests.

The identifications of tribal and forest villages should be left to the State Gobernments. Hunting and cultivation in these villages could be regulated by incorporating provisions in the concerned rules under the Act.

The NGOs want forest contractors who they accuse of destroying forest by illegally cutting and removing trees, to be replaced by tribal or forest labour co-operative societies should be assigned the task of plantation work, harvest, marketing and distribution of minor forest produce and other contract works. The societies should also be vested with powers to collect minor forest proudce, free or at a nominal price.

There must be joint forest management by village forest protection committees, consisting of representatives from the local communities, forest departement officials and NGOs. The working and management plans should be finalised only after consulting these committees: Though such committees are in existence in some States,they do not as yet have legal status.

The forest departments of the State Governments should employ at least one male member of every tribal family residing in the protected areas as a watcher or a guard, is another recommendation made by the NGOs. Those thus employed, should not be transferred out to other national parks or wildlife sanctuaries.

Terms such as core zone, buffer zone, manipulation zone and cultural zone, should be defined and included in the WPA, say the NGOs. Since these areas, defined for biosphere reserves, have not been included in the WPA, these terms are not legally valid at present.

CAMPAIGN FOR RIGHTS OVER NATURAL RESOURCES

The Hindu Business Line **July 10, 1996**

–S.Gopikrishna Warrier

MADRAS. July 9 :- ON August 15,when the country enters the 50th year of Independence, a group of about 300 non-Governmental organisations repersenting the network. Jan Vikas Andolan, will launch a national campaign to get people's rights over natural resources.

The year-long campaign will mark the beginning of a movement towards the self-rule by tribals and the rural poor towards the natural resources. This campaign will be called Azadi se Swaraj(from Independence to self-rule).

According to the convenor of JVA, Mr. S.R.Hiremath,though the country gained Independence in 1947, the dream of village self-rule was never attained. Instead the programmes and politics benefited only a small segement of the society.

Vast sections of the population, especially tribals,fishermen and the rural poor who are dependent on the natural resources such as forests, land and water have been impoverished by these programmes, he said.These communities have sustained the natural resources through judicious consumption.

However, these resources, which are the very survival base of these communities are being threatened in the name of development and scientific management. The resource base is being further exploited by powerful forces within and outside the country.

"It is essential to recognise the rights of these deprived sections of the people over the natural resources that have tried to protect against heavy odds." said Mr. Hiremath."We recognise that it is challenge that will take not just years but dedicated collective work on part of all concerned persons."

Through the campaign, the members of JVA aim at

developing a clearer understanding of the concept of self-rule and its cultural, social, environmental and economic ramifications.

They also want to strengthen the hands of people's groups and movements working to get a greater control for the poor over their natural resources.

The members would pressurise the policy makers to come out with a people-oriented national water policy. They would also push for a national bio-diversity policy and legislation as per the stipulations of the Convention on Biological Diversity and for making amendments to the Wildlife Protection Act of 1972.

The NGOs would insist that these policies and legislations be similar to the National Forest Policy Resolution (NFPR) of 1998, according to Mr. Hiremath. The NFPR emphasised that forest resources should meet the fuelwood,fodder, minor forest produce and small timber requirements of the rural and tribal populations.

The JVA,along with the National Front for Tribal Self-Rule, has been demanding that the Union Government accept the recommendations of the Bhuria Committee which had looked into the ways and means to extend local self-Government into tribal areas.

The Narasimha Rao Government had committed to take legislative action on it but did not honour its commitment. The United Front Government has stated in its Common Minimum Programme that it would "study the conclusions contained in the report of the Bhuria Committee on Scheduled Tribes made in 1995 and take necessary steps to implement the sailent recommendations."

The committee had recommended that the tribal gram sabha, the body represented by the individuals in a tribal village or hamlet, should have wide-ranging powers over the natural resources to safeguard the rights relating to land, water, forest, minor forest produce; enforcement of customary rights over grazing and biomass collection: manage, regulate and use common property resources: and maintenance of community assets.

CAMPAIGN FOR RIGHTS OF TRIBAL PEOPLE

The Hindu, July 31, 1996

BANGALORE, July 30. The Jana Vikas Andolan (JVA) will be launching a year long campaign to demand rights of tribals, fisherfolk and rural poor over their natural resources. The campaign titled 'Azadi se Swarajya' (from independence to self-rule) will begin on August 15.

Mr. S.R. Hiremath, an activist of JVA told presspersons here on Tuesday that specific demands of the Andolan included the implementation of the Bhuria Committee report that had recommended control over natural resources by the gram sabha comprising tribal people and an end to the eviction of tribal people and an end to the eviction of tribal people from Nagarahole and other places.

The Andolan is also organising a national workshop in Ooty in Tamil Nadu on August 17 on "Eco-development project for seven protected areas in the country". In addition he said systematic efforts would be made for developing a comprehensive. Wildlife Conservation Act through collective efforts of activists, scientists and experts.

CAMPAIGN FOR ENVIRONMENT PROTECTION

Deccan Herald, August 1, 1996

BANGALORE, July 31. The Jana Vikas Andolan (JVA) will be launching a year-long campaign - "Azaadi-se-Swarajya" (from independence to self-rule) - all over the country from August 15, to focus "people's rights over natural resources", according to JVA Convenor S R Hiremath.

Talking to reporters here, he said a series of activities like padayatras, workshops and seminars would be held at various places in the country, especially in the areas where the NGOs and other voluntary organisations were working for the development of tribals and rural poor.

He said a two-day national workshop on "Eco-Development Project" funded by Global Environment Facility (GEF) and World Bank within the perspective of Bhuria Committee report and National Forest Policy would be held from August 17, in Ooty.

Mr. Hiremath said the aim of the workshop was to bring together various groups of tribals and non-governmental organisations (NGOs).

The issues included "Tribals and National Parks" and "Students Involvement Programme".

*Sanctity of Life

How can you buy or sell the sky, the warmth of the land? The idea is strange to us.

How do you own the freshness of the air and the sparkle of the water how can you buy them?

Every part of this earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every clearing, and humming insect is holy in the memory and experience of my people. The sap which courses through the trees carries the memories of the red man.

The white man's dead forget the country of their birth when they go to walk among the stars. Our dead never forget this beautiful earth for it is the mother of the red man. We are part of the earth and it is part of us. The perfumed flowers are our sisters; the deer, the horse, the great eagle, these are our brothers. The rocky crests, the juices in the meadows, the body heat of the pony, and man - all belong to the same family.

This shining water that moves in the streams and rivers is not just water but the blood of our ancestors.

The rivers are our brothers, they quench our thirst. The rivers carry our canoes, and feed our children.

The air is precious to the red man for all things share the same breath - the beast, the tree, the man; they all share the same breath. The white man does not seem to notice the air he breathes. Like a dying man for many days, he is numb to the stench. But if we sell you our land, you must remember that the air is precious to us, that the air shares the spirit with all the life it supports. The wind that gave our grandfather his first breath also receives his last sigh. And the wind must also give our children the spirit of life. And if we give you our land, you must keep it apart and sacred as a palce where even the white man can go to taste the wind that is sweetened by the meadows' flowers.

What is man without the beasts? If all the beasts were gone, men would die from a great loneliness of spirit. For whatever happens to the beasts, soon happens to men. All things are connected.

This we know. The earth does not belong to man, man belongs to earth. This we know. All things are connected.

Whatever befalls the earth befalls the sons of the earth. Man did not weave the web of life; he is merely a strand in it. Whatever he does to the web, he does to himself.

So we will consider your offer to buy our land if we agree it will be secure the reservation you have promised. There perhaps we may live out our days as we wish. When the last red man has vanished from this earth, and his memory is only the shadow of a cloud moving across the prairie, the songs of insects will still hold the spirits of my people. For they love this earth as the newborn loves its mother's heartbeat. So if we sell you our land, love it as we have loved it. Care for it. Hold in your mind the memory of the land as it is when you take it. And with all your strength, with all your mind, with all your heart, preserve it for your children, and love it.....as God loves us all.

One thing we know. Our God is the same God. This earth is precious to Him. Even the white man cannot be exempt from the common destiny, we may be brothers after all. We shall see.

** Letter of Indian Chief - the Chief Seattle (Chief of Red Indian - Suquamish Tribe) in a letter to the President of United States of America asking for the Tribe's land in the year 1854.*

"If the people's elected representatives do not do it, then the people, will do it themselves. This is the message of the process started recently by a network of non-governmental organisations to draw up a comprehensive people-oriented biodiversity policy, which will set forth the general principles for a biodiversity legislation.

The group of NGOs, led by Samaj Parivartana Samudaya from Dharwad (Karnataka), the Save Nilgiris Campaign from Udhagamandalam (Tamil Nadu) and Econet from Pune, has started this process as the Centre has not made much progress in drawing up either a policy or legislation for the protection of the country's diverse biological wealth.

As a signatory to the Convention on Biological Diversity (CBD), finalised at the United Nations Conference on Environment and Development (UNCED), at Rio in June 1992, India has to have in place a biodiversity legislation to protect the country's natural resources.

Governments may be elected by the people; but the people are forgotten soon enough. And so is the Constitution. The people of the country are on their way to reminding the Government about its responsibility to protect their livelihood and natural resources."

- S. Gopikrishna Warrier

in **BIODIVERSITY FOR A PEOPLE-ORIENTED POLICY**
In *The Hindu Business Line*